MANAGING COLLECTIVE INTELLIGENCE

Toward a New Corporate Governance

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"Cooperation and partnership are the only route that offers any hope of a better future for all humanity."
Kofi Annan, Secretary General of the United Nations
(from a speech to the UN General Assembly on September 24, 2001)

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Vincent Iacolare, Director of Information Systems, Quality and Organization of **ALTRAN Group**, and Chief Knowledge Officer: "This book will help us to develop collective intelligence management in our companies. Admittedly challenge is big for all of us who want to enter the collective dimension. We have to be ready to change our mentalities and habits. What a real pleasure though, when you reach a collective result, which is complete, unshakeable and unchallengeable. Collective intelligence has become "genetic" to me"

Jacques Brégeon, director of the **Center for Sustainable Development** and teacher at **Ecole Centrale Paris (Engineering School)**: "France, which has often fostered IT pioneers, is starting to understand that not technology but culture is the main issue. Beyond economic intelligence and its competitiveness, we have to turn to collective intelligence. Olivier Zara's book shows us how to implement this collective intelligence everyday in our companies"

Caroline Wirta, CEO of **WIRTA Consulting**, cross cultural management consulting: "A book to deliver to every executive, manager and politician. A practical management guide based on sharing, accountability and respect values, which will help North America take a big step forward"

Jean-Jacques HEILAUD, President of the **Internet Professional Association for state authorities**: "I often take a leaf out of Olivier Zara's book to manage our professional network. It is a source of inspiration for those who are trying to develop collective intelligence in practical terms in their organizations. And we absolutely need that, more particularly in the public sector…"

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Author Profile

Olivier Zara has been running Axiopole for more than five years. In January 2001, he founded the company which provides consulting and training to manage collective intelligence as well as software engineering based on Amplified Intelligence Technologies.

Previously, he had been management consultant and trainer for two years for INSEP Consulting, a management consulting firm advising leading companies on issues of human resources, skill development and project management.

Former Captain in the French Army, he has been audit officer, then administrative and finance manager for seven years. Between 1995 and 1998, he took part in several military operations in Yugoslavia and Bosnia-Herzegovina within the United Nations Peacekeeping Forces. As a Peace Soldier, he received an honorary title from France in appreciation of his services to the nation.

He studied at the EMSAM Military College (Ecole Militaire Supérieure d'Administration et de Management). He graduated in Law and got a Master in Security, Defense and Military History.

He is now Permanent Resident in Canada - Member of the Collective Intelligence Business Network.

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Introduction

Aristotle was already talking about collective intelligence back in Antiquity: "The principle that the multitude ought to be supreme rather than the few best is one that is maintained, and, though not free from difficulty, yet seems to contain an element of truth. For the many, of whom each individual is but an ordinary person, when they meet together may very likely be better than the few good, if regarded not individually but collectively, just as a feast to which many contribute is better than a dinner provided out of a single purse. For each individual among the many has a share of virtue and prudence, and when they meet together, they become in a manner one man, who has many feet, and hands, and senses; that is a figure of their mind and disposition." (Aristotle, excerpt from Politics, Book III, Chapter XI).

In your opinion, is a decision or action of higher quality if it is taken by mobilizing the intelligence of a number of people? Does joining forces create strength? Should you think before you act? Should you gather information before you think? One more question: Do you find all of these questions idiotic? If your answer is an immediate "yes" because this is all common sense, then here is another question: Is this what you actually do on a daily basis, or even from time to time? Need time to think about it? Is your answer less immediate?

These questions open the door to two concepts: **collective intelligence (CI)** and **knowledge management (KM)**. The premise of KM and CI is that **collective performance exceeds the sum of individual performances.** At an operational level, collective intelligence is the capacity of an organization, a community, to ask questions and seek answers together. Knowledge management, to take one of the simplest definitions, is the act of capitalizing and sharing knowledge. Here, *to capitalize* means to give form to information outside the head of the person who holds it, so that it can be shared and made available to the organization.

We know from biology that our own intelligence depends not so much on the number of neurons in our brain or some genetic inheritance, but on the number of **synapses interconnecting these neurons** (CI) and the **acquired information** we have accumulated since our birth (KM). Human intelligence is forged through rich interconnections and exchanges based on what a person knows. As we age, synapses decrease, contributing to the onset of degeneration. Similarly, for an organization to become more intelligent, "synapses"—interconnections among its members and entities—must increase and the information needed for those synapses to occur must be capitalized.

As Richard McDermott, President of McDermott Consulting, explains: "Neuron connections are essential to human intelligence; people connections are essential to organizational intelligence." What is true among members of an organization is also true, from a systems perspective, between a company and its environment. Here we see the emerging concept of the "extended organization" that encompasses more numerous relations—interconnections—with the outside world (e.g. through business portals aimed at suppliers).

How will companies perform in the future?

What will business performance mean in the future? Business performance in an **industrial and commercial society** means knowing how to produce and sell better and faster than one's competitors. Today, most companies know how to produce and sell. That is why they exist. If they did not know how, they would have already disappeared. But as companies find themselves increasingly on a par with each other in this regard, the easiest way to grow and gain market share is to buy up competitors.

Business performance in an **information society** means knowing how to mobilize collective intelligence and the knowledge of stakeholders (employees, suppliers, customers, etc.). If knowing how to produce and sell has become a basic necessity, it no longer constitutes a sufficiently differentiating factor in international competition. In the past, enterprises were industrial and commercial; in the future, they will increasingly have to be **intelligent**.

The intelligent enterprise is built principally on CI and KM, which cannot exist and effectively function without information technologies, which are one type of **Amplified Intelligence**

technology. Amplified-Intelligence technologies aim to enhance and extend human intellectual capacities, particularly the cognitive capacities of groups. They have significantly advanced in recent years from information, to communication, and now collaboration.

Information and communication technologies have made information available: *store and share*. **Information and collaboration** technologies (collaborative intranets) go much further. They enhance the performance of human interaction and imbue information with operational value.

Amplified Intelligence technologies are now giving concrete form to the concepts of collective intelligence. But some people think they can develop collective intelligence while minimizing the importance of software, even avoiding it altogether. Besides classic resistance to change, such avoidance can be attributed to cultural predispositions toward physical human contact and verbal communication. In Latin countries, for instance, such traits are cherished as part of a cultural identity. But over the next decade, such factors will cause many companies to lag significantly behind their Anglo-Saxon counterparts who are much more receptive, early adopters of such technologies.

In most companies, the least developed dimension of the intelligent enterprise is CI, which materializes day by day through the kind of intellectual collaboration that can be observed particularly during moments of **collective reflection**. According to Pierre Lévy, Director of the Chair in Collective Intelligence Research at the University of Ottawa, "collective reflection is a more explicit, discursive and conversational subset of collective intelligence. Collective intelligence in fact includes the organization and dynamic operation of all elements of a culture." Collective reflection in companies often remains weak for cultural reasons, out of managerial habit, and for lack of adequate information and collaboration technologies.

In the intelligent enterprise, it is important to distinguish between **collective reflection** and **collective communication**:
- *Communication* allows for an exchange of information, without there necessarily being any intellectual collaboration.
- *Reflection* implies intellectual cooperation through which information is created, becomes meaningful, and is applied to existing information, transforming it into new information.
This distinction is important because people often think they are cooperating when in actual fact they are merely communicating. Just about everyone sends and receives information; few are those who engage in the more difficult act of co-constructing it.

One must also distinguish **collective reflection** from **collective decision-making**. People's knee-jerk reaction when they first hear about CI is often: "That's all very nice but a boss has to make the decisions!" They then go on to explain that CI would be very dangerous because would make a company democratic (an organization within which all decisions are taken by majority vote). Great confusion thus exists between reflecting and deciding. And that is unfortunate, because it scares those who would like to change the status quo. But CI has nothing to do with the actual act of deciding, but with thinking, cooperating, innovating, creating. CI obviously helps decisions emerge, but does not directly impact the decision itself. Little does it matter if one or several people make the ultimate decision. What matters is the mobilization of collective intelligence and knowledge in the process of getting to that point. Many managers resist collective intelligence as a process because they fear it will cause them to lose power. CI does not redistribute power (everyone keeps their place and same amount of power), but changes management practices and how power is exercised. CI thus implies a **new kind of organizational governance**, namely **management of collective intelligence**.

No automatic connection exists between **collective reflection** and **intelligent decision-making**. According to Pierre Lévy, "The mass is not always right, especially when that mass is like a conformist herd of sheep that questions nothing. That is why initiatives toward collective intelligence aim to capitalize on the whole diversity of knowledge, skills and ideas within a group and to organize that diversity in a creative and productive dialog. The culture of collective intelligence gently and peacefully establishes an open "multilog" preferable to a compartmentalization and isolation of intelligence as well as to politically correct uniformity."

Collective reflection can result in a stupid decision, just as individual reflection can result in a superb decision. Collaboration does not make a decision intelligent, but without it, the decision may not be! Getting people together is not enough. The purpose of managing collective intelligence is to get to an intelligent decision through tools, methods, processes and technologies. Managing collective intelligence means, for example, that a manager defines who will gather information,

who will reflect, who will give their opinion, who will decide, who will capitalize the information, and who will act. Sustainable development policies, for instance, include the very important phase of "stakeholder consultation." Yet that is but one of the steps in a process leading to intelligent decisions.

Information creates value. But this value especially depends on the quality of the interaction among people around that information. Collectively constructed value will far exceed the mere sum of the talents of each person in the group. Today's organizations must have the desire (culture, values, beliefs), know-how (interpersonal skills) and means (organization, operations) to **mobilize knowledge and collective intelligence**.

Genesis of this book

As chance would have it, the genesis of this book is consistent with its content! It was written through management of the collective intelligence of the author's human networks using information and collaboration technologies. Outside source materials and pages from the initial drafts of the book served as a springboard for discussions that together provided extraordinary inspiration.

Exchanges took place through the Axiopole collaborative R&D space, where more than 500 people now meet. The work continues, this book being but one step. You are invited to send comments to the author (see biography) or to share them publicly by posting them directly on the collaborative space.

Upon finishing the book, one of its first readers exclaimed, "How could all of that have come out of one person's head?!" As the author responded: "It isn't from one person's head but from the collective intelligence that emerged over months from people more or less involved in a constantly changing informal network."

On the site specially created for this book, you will find numerous resources on managing collective intelligence (e.g. articles, reader experiences). To keep up on new developments, you can also subscribe to the collective intelligence newsletter. Go to: www.axiopole.info

When it comes to communication, we all know from experience that misunderstanding is actually the norm. To help clarify the concepts and vocabulary of collective intelligence, a **glossary** is provided at the back.

This book takes an operational approach toward enhancing and sustaining the overall performance of organizations. Its purpose is to help people understand why cooperation is so essential and how to do it. May it be a source of inspiration you will want to share!

Chapter 1
Fostering the Emergence of an "Intelligent Enterprise"

"The ant is a collectively intelligent and individually stupid animal; man is the opposite."
Karl Von Frisch

In the above quote, behavioral specialist Karl Von Frisch implies that we should develop our collective intelligence while maintaining individual intelligence. If we are unable to mobilize our collective intelligence, will we have to become like ants? And how can we become like ants while emulating the ostrich? Why the ostrich? Because ostriches make politics to avoid recognizing when people are behaving the opposite of ants!

Howard Gardner, a psychologist at Harvard University, asserts that there are at least eight forms of individual human intelligence: verbal (for communicating), rational (logical/mathematical), musical (giving meaning to sounds), spatial (perceiving images and reproducing them), kinesthetic (controlling one's body, movement), intra-personal (ability to understand oneself), interpersonal (ability to understand others, empathy), and naturalist (ability to understand one's environment). There thus exists a **"set" of individual intelligences**.

Collective intelligence is the intelligence of connections, of relationships. Some people also define it as connective intelligence, a "global brain," symbiotic man, or relational intelligence. At its core, collective intelligence is about harmonious connections. These connections foster cooperation. As such, collective intelligence is the ultimate outcome, the materialization, of intellectual cooperation.

According to Lévy, "the best use we can make of new technologies is not artificial intelligence (AI), but collective intelligence: not getting computers to imitate humans, but helping humans to think and develop their ideas collectively." CI helps humans think together, whereas AI tries to substitute for humans so as to limit human error.

In an organization, **managing collective intelligence** means combining all of the tools, methods and processes that enable connection and cooperation among individual intelligences in order to achieve a common objective, accomplish a mission or complete a task. To manage the collective intelligence of an organization is to cultivate a dynamic of intellectual cooperation among individuals (interpersonal cooperation), create internal cooperation among teams and entities (through a collaborative intranet, for example), and develop external cooperation with the organization's customers, suppliers and even competitors. Cooperation with customers and suppliers is referred to as the *extended enterprise*. Cooperation with competitors is called "coopetition," a contraction between cooperation and competition, meaning that we are competitors but we cooperate. Two industrial competitors can, for example, cooperate when it comes to shipping their products if they don't happen to compete on that basis but on how customers rate the product itself.

A. The three pillars of the intelligent enterprise

As we have said, the information society is gradually transforming industrial and commercial companies into intelligent enterprises. Those that do not evolve in this direction risk falling out of sync with the society now emerging. The intelligent enterprise stands on three pillars: *collective intelligence* (quantity and quality of intellectual cooperation), *knowledge management* (quantity and quality of knowledge) and *information and collaboration technologies* (quantity and quality of software, hardware and networks facilitating relational and information flows). Quantity does not necessarily mean having the most cooperation, knowledge, or software, but the quantity best suited to the situation and needs of the organization.

These three pillars continuously interact; they are inseparable and complementary. Acting on one means also advancing the others to reestablish congruity among the three. If one is missing, the

enterprise will not be operating in the realm of intelligence but some other dimension! As illustrated below, each pillar must be accorded equal importance and their development coordinated.
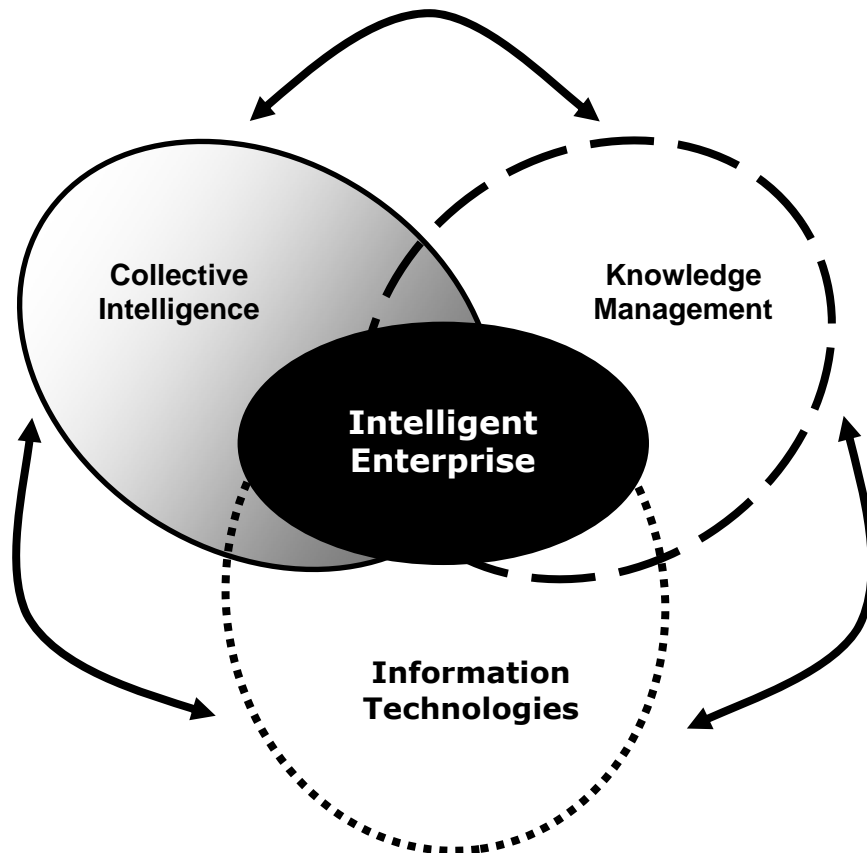
The **vital energy** of the intelligent enterprise resides in *intellectual cooperation*, that is, in interactions, both interpersonal (between two or more people) and inter-organizational (between teams, divisions, companies, countries, etc.). But cooperation requires that people come together, which in turn requires movement. Throughout human history, cooperation has been limited by our capacity to move from point A to point B on foot, by boat, by plane... With the advent of the telephone, and then the internet, the possibilities for cooperation are now simply extraordinary. But technology advances faster than culture, which has been forged and passed down from generation to generation as a function of limited technological means of cooperation.

Intellectual cooperation is defined by several dimensions:
- *Values*, *culture*.
- *Time and technologies*. Cooperation develops with the development of technologies that make face-to-face or remote human interaction possible.
- *Space*. We cooperate more with those in our physical proximity. But the virtual space of the internet has greatly extended that proximity.
- *Organizational strategy*, *structure*, *daily operations*, *and dynamics*. Constant interaction exists among these factors, and that interaction influences the quantity and quality of cooperation.

But what we experience every day is often false intellectual cooperation.

B. False cooperation: you think you are cooperating, but you are not!

No one openly denies the need for cooperation. Everyone says and thinks cooperation is necessary. That is the politically correct thing to say. Unfortunately, though, cooperation as currently practiced is often a false cooperation to **optimize personal gain**, not necessarily at the intentional expense of the group, but without real concern for it either.

Here are a few clues for distinguishing between cooperation and non-cooperation . . . and seeing which you yourself actually practice:

I am not cooperating when:	I am cooperating when:
- I participate in a one-on-one or group meeting. - I communicate (issue or receive information), answer a question I am asked, formulate ideas upon request. - I manage a team or project, help others because my manager has asked me to. - I try to obtain maximum resources from the organization to achieve my objectives under optimum conditions, and try to maximize gains in negotiations (get a good margin from customers and the highest salary from my employer). These actions have to do with communication, management, or negotiation. They are necessary and useful, but do not constitute cooperation.	- I give information to someone I think needs it, even without being asked. - I devote some of my work to helping others accomplish theirs, even though doing so does not help me achieve my own objectives. I do this because it contributes to collective performance. I do it spontaneously and not because my manager has directed me to. - I formulate and spontaneously offer ideas to improve the performance of my organization. - I try to build win/win relationships work. I care about others' interests as much as my own, but without letting others walk all over me. I want to win, I want the other person to win, and I want the community to win—"win-win-win" according to the expression used by Pascal Baudry, President of WDHB Consulting.

The actions of managing, communicating and negotiating are all just as essential as cooperating. But to develop cooperation, you first have to distinguish it from these other actions. You might cooperate in the context of a meeting, but simply participating in a meeting does not in itself mean you are cooperating. Do you agree? Why? You may think you are cooperating, but are you really?

On a collaborative intranet where this text was being discussed, Florence Imberti, one of the participants, responded to these questions by saying: "If I understand correctly, I am cooperating when I show initiative, when I help my neighbor with his or her work, when I am imaginative and creative, and I do all of this in the common interest of my personal fulfillment and the success of my company? So when do I do the work I have been assigned? How do I reconcile the two in the day-to-day (accomplish tasks assigned to me and cooperate)?"

Establishing a collaborative contract supported by an ethic of collaboration

Thank you, Florence! This heartfelt comment full of common sense goes right to the point. It expresses how torn we might feel between an ideal toward which we would like to strive, and the no-nonsense reality that gets the better of us day to day. The ideal is "united we stand." The reality is "every man for himself." We are judged on the basis of a social contract that says we are paid to achieve our objectives, not those of the next guy. Florence writes "the work I have been assigned," because it seems improbable to her that her manager would ever "assign" her *cooperation* as a work objective. Giving of my time to others is a waste of time because it is not something I have explicitly been assigned to do.

The social contract currently in place is implicitly based on non-cooperation. Cooperation does exist, of course, but it is neither required nor expected by the social structure. It is informal. In reaction to Florence Imberti's comment, another participant, Florent Lafarge, suggests: "We certainly will not move toward collective intelligence without a new social contract we might call a *collaborative contract* that could specify relational rights and obligations corresponding to cooperative behavior. Upholding that collaborative contract would bring about a change in behavior and thus a change in values toward an **ethic of collaboration**." End of discussion—or almost. We need a **new social contract** based on an ethic of collaboration so as to render explicit which behaviors are acceptable and desirable and which are not. In line with this new ethic, people would be evaluated based on their ability to cooperate (a new individual performance criterion). Even more importantly, top management would set the example by upholding this ethic itself.

A collaborative contract is useful for one simple reason: I want to cooperate, but I do not want to be the only one. Giving of my time to the group must be part of my objectives, my day-to-day work. To understand this, we need to change our paradigm, our competition-based vision of the

world. Competition is good and necessary if it is balanced with cooperation (concept of coopetition).

An employment contract applies to the individual; a collaborative contract applies to the collective:

	Individual	**Collective**
Why? (Individual and collective purpose)	Incentives	Mission of the organization
What? (Results to be achieved)	Individual objectives	Strategy of the organization
How? (Framework within which results are to be achieved) **Written agreement on how:**	Regulations, procedures, tools, methods **Employment contract**	Intellectual cooperation **Collaborative contract**

In France, employment contracts are based in labor law, whereas collaborative contracts are based in civil law (having the same legal force as any other contract). This table highlights the following points:
- The purpose of a collaborative contract is not to motivate employees. **Motivation** derives from individual incentives.
- The purpose of a collaborative contract is not to give **meaning** to work. Managers are the ones who must make the day-to-day work of their team meaningful, particularly by clearly defining the missions to be accomplished. If, by chance, the collaborative contract motivates certain people or gives them a sense of meaning, this is just a side effect.
- The collaborative contract is a **written agreement** that applies to the collective, just as the employment contract is a written agreement that applies to the individual. As such, it defines the framework of working relationships; it is not meant to usurp the role of managers in managing them. It supports intellectual cooperation by making it tangible. As long as intellectual cooperation remains implicit, it does not officially exist.

Today, socially acceptable behavior (good manners) is what frames interpersonal relationships. Creating a contractual collaboration agreement structures these relationships so that everyone can achieve his objectives faster and better. How results are achieved must include helping the other person to reach his objectives, just as he must help me. Such intellectual collaboration is also fundamental to organizing the capitalization and sharing of knowledge. Without it, Knowledge Management does not exist.

The collaborative contract can also help in managing **relational conflicts** that hamper the performance of an organization. Uncooperative behavior is more frequent when there are personal conflicts. The workplace should not be a battleground where accounts are settled with people who rub us the wrong way. People who, by signing a collaborative contract, have agreed to cooperate will be more willing to do so even with someone they find disagreeable. The contract does not require that people like each other, only that they work together effectively while at work. Certainly you have noticed that people who like each other cooperate more easily and more spontaneously, as if they had a kind of implicit collaborative contract between them. But in an intelligent enterprise, intellectual cooperation cannot be limited to people who like each other! The collaborative contract encourages cooperation that transcends interpersonal conflicts. As such, it serves as a social regulator.

Creating the conditions for real commitment

The contract will never truly be put into action unless it is **co-developed**, unless the community itself identifies **effective behaviors** that have evolved within the organization's culture and must be preserved, and **ineffective behaviors** that hobble collective performance and must be replaced with new behaviors, such as information sharing and having a win-win approach in vendor relations. In other words, no "model" collaborative contact exists, nor should it. That would be dangerous because a collaborative contract must reflect the culture and experience of the collective, and especially because it would be highly contradictory if this contract establishing the principle of cooperation were drafted without it! A manager would be putting himself in a "difficult"

position if he proposed a collaborative contract without collaborating! Now, for fun, let's take a little poll!

What is your position on the collaborative contract? (circle your answer)			
For it	**Somewhat for it**	**Somewhat against it**	**Against it**
What are the 3 main reasons for your answer?			
Reason 1:			
Reason 2:			
Reason 3:			

Reread your answers as soon as you have finished this chapter. You may be surprised. You haven't stated reasons for your position? Too bad, no surprise!

The collaborative contract: a disputed and indisputable tool?

The collaborative contract is not an objective but a **means** of achieving an objective, namely, fostering intellectual cooperation. In the online collaborative-space discussion "Designing and Implementing a Collaborative Contract," this is clearly expressed by Vincent Iacolare, Frédéric Lévy and François Lorek, who host the know-how capitalizing networks of the Altran Group:

"We completely agree with this approach (social contract, collaborative contract, rights and obligations, ethics, involvement of top management). We implement it in our networks based on two principles:
- the individual—management of the individual—network (collective) three-way relationship
- give-give/win-win, in which each party must give and win in balance with the other two.

Vincent, Frédéric and François also suggest what should happen before this contract is signed so as to ensure true congruity between the values of the contract and the values of the person signing it. The principle is this: "Assess the signer and then raise his/her awareness to the level the commitment requires (depending on each person's culture). This assessment period enables the future contract signer to gage the collective and determine if it coincides with his or her own basic values." It is thus important to develop other tools that synergistically complement the contract, or can be used as an alternative. But the tools selected must be ones that ensure REAL behavioral changes.

The idea of a new social contract naturally implies a major change, eliciting fears and resistance proportional to the scope of that change. Yet for the time being, no other tool, method or process has emerged that would yield comparable or better results.

Our daily life is full of contracts: employment contracts, rental contracts, insurance contracts, etc. These contracts meet with surprisingly little, if any, opposition, while the collaborative contract meets with strong resistance. You read a rental agreement. If you consider the rent too high, you don't sign. If its affordable, you sign. Likewise, if you read a collaborative contract that requires no change on your part because you already practice the behaviors it asks you to adopt, then you sign it straight away. You are happy to see that others will be adopting behaviors in line with your own.

But if you read the collaborative contract and you discover that it requires behaviors at odds with your own, you will refuse to sign. Yet you will feel put on the spot, having to give at least one reason for your refusal. But that reason cannot be: "I do not cooperate and I do not want to cooperate." Nor can you say, "What bothers me about a collaborative contract is not the word *contract* but the word *collaborative.*" You need a way out.

To get out of this fix, people often suggest using other potentially ineffective or useless tools such as a collaborative charter, a work charter or, how about a multilateral, three-phase spatial-temporal agreement with reverse double triangulation in a constant oil bath! The first thing people very often suggest is to replace the word *contract* with the word *charter* because **a charter is not really a commitment by anyone except the people who wrote it.** It is a declaration of intention, a unilateral commitment. In contrast, the word *contract* implies a **real bilateral commitment** by those who sign it and has the same legal force as an employment contract.

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If this "charter" idea is rejected, people then hail the virtues of imitation. The idea of management by imitation is simple (perhaps *too* simple): if you put a person who cooperates into an organization where no one cooperates, over time everyone will gradually begin to cooperate. It is, indeed, a rather ingenious solution…unless the person who cooperates begins to imitate those who do not! Generally speaking, people more readily imitate the dominant behavior of a group as a way of integrating. If they don't, they may well be "disintegrated." Rarely will a group start imitating the deviant behavior of one of its members.

The last-resort resistance tactic is to launch a major debate on the utility of a "contract" in developing cooperation. People will argue that a contract does not give meaning, does not motivate people, that it is just a bureaucratic procedure. They will drag that debate on as long as possible to bog down the whole process. They wouldn't ever debate the desirability of an insurance contract, because clearly it's good to get reimbursed if the house burns down. A landlord will value having a rental agreement that ensures his renter cannot just stop paying rent, and the renter will be happy to know that his rent cannot be jacked up according to the financial need or whim of his landlord. These contracts meet a **need**, and are accepted without problem.

Collective need vs. individual need

The collaborative contract does not meet an individual need but a collective need. Yet people initially react to it in light of their **individual needs**. This results in a head-on collision between the needs of the collective and the needs of the individual. The champions of collective-intelligence values within an organization must work to ensure that executives recognize the collective need.

Supposing executives do perceive the collective need and decide to institute a collaborative contract. Most people in the organization will not support it. But when each person grasps the advantages of "connect and collaborate" over "command and control," individual need becomes very strong. Today, it is very difficult for people to imagine the difference in harmony and quality-of-life at work that would come with "connect and collaborate," because most companies still function as "command and control" operations.

The fact that the needs of the individual take top priority today does not mean that the principle of a collaborative contract should be negotiated: that is **non-negotiable**. The contents of the contract, however, *must* be negotiated, because that content has to mesh with the existing culture in order to gently move it forward. **The contract being non-negotiable does not mean it is imposed.** In fact, legally, a contract cannot be forced. It is even deemed never to have existed if it was signed under duress. Everyone is free to sign or not sign. The fact that some people choose to sign solely to safeguard their salary at the end of the month is not the problem of top management but of those who sign.

Just as employment, insurance, rental, and other contracts must exist, so must collaborative contracts. Who today would agree to work without an employment contract? If the principle of having an employment contract is not negotiable, why should having a collaborative contract be? Negotiating the principle of this contract amounts to disputing the collective need for intellectual cooperation. Recognition of this collective need requires adoption of a collaborative contract, or any other equally powerful tool, method, or process.

Executives who have become aware of this collective need must demonstrate **great courage** to institute the most powerful behavior-changing tool (whatever that may be), and not a tool that garners consensus (which would change nothing!). But even once a collaborative contract is in place, the "time" argument still has to be overcome.

Classic resistance to change: conquering the time argument

"Time spent reflecting saves time," asserts Publius Syrus. But even when it comes to reflection, one of the classic ways people avoid change is by arguing that there isn't time. Contract or no contract, people wanting to quash KM initiatives, or change in general, say they would love to cooperate but simply don't have the time. Just wait and see: when you start talking about implementing a KM approach or developing cooperation, someone unsuccessfully fishing for arguments against it will very definitively say, "Given my schedule, I just don't have time. That's all very nice in theory, but we have to get back to reality! How do you expect me to find the time for that?"

Lack of time as a reason for sticking with individual-style management without collective reflection or knowledge sharing is a *false argument*. "I don't have time" really means "I don't **want** to do it." But "I don't have time right now but I will do it on such and such a date" means "I am **unable** to do it right now, but want to." People organize their time and set action priorities based on the way they are used to working and especially on their values and the perceived pertinence to achieving their objectives. In other words, they may see a collective-intelligence approach to management as useless or not want to understand its worth because they don't share the values underlying it.

People do not just naturally understand the advantages of collective intelligence. If they did, there would be no need to write books and conduct trainings on the subject. Values naturally evolve over time or through management initiatives aimed at encouraging behaviors in line with the current or desired company culture.

The time argument is very useful to those who want to prevent or put off any cultural shift toward collective intelligence which they see as being inconvenient and dangerous. But in the absence of any collaboration ethic or collaborative contract, it is hard to call people on this tactic. It is all part of the game!

In short, instituting a collaborative contract will require individualized and group training and coaching to develop behaviors that stem from the values of **sharing** (my knowledge, my experience, my skills, etc.), **responsibility** (feeling responsible for achieving one's objectives and also for the on-going development of the company), and **respect** (respecting the interests and opinions of others; I win, the other person wins, the whole group wins). The major difference between cooperation and non-cooperation actually comes down to spontaneity and the values that prompt us to cooperate or not.

What hampers cooperation?

The many factors that stymie KM and CI are nearly identical:
- *Culture*, when oriented toward power and status rather than responsibility and sharing
- *Verticality*: a hierarchical, pyramid-shaped organization that compartmentalizes the company into uncollaborative warring fiefdoms.
- *Resistance to change*: fear of the unknown and the new, aversion to risk, the comfort and security of old habits,
- *Technology*: investment in the wrong software and hardware; cultural resistance to collaboration software (particularly in Latin cultures, where people tend to fear it will deprive them of physical, face-to-face contact); top executives setting a poor example (e.g. the secretary prints out an email, the executive handwrites his response on a piece of paper, the secretary then types up and emails the reply.)
- *Unawareness* that the desire, know-how and/or means to cooperate exist. The mental or organizational barriers to awareness have to be overcome.

Case Study: WDHB Consulting

Founded 16 years ago, the Berkeley based WDHB Consulting Group, is exemplary in how it implements collective intelligence through its service offerings (1), collective management system (2), and collaborative contract (3).

I. For the past decade and a half, WDHB has been developing the collective intelligence of executive teams through *Learning Expeditions*®. These traveling seminars in North America, Asia and Europe mobilize the collective intelligence of a team over the course of a week, participants to jointly develop new ideas and action plans on managerial or strategic issues their company is facing. This collective intelligence is simulated primarily through:

a) the cultural and cognitive shock the team collectively experiences during corporate visits, meetings with experts, and socio-cultural activities;
b) daily sessions working as a group;
c) the strengthened relationships and trust that result from living this shared experience. The Learning Expeditions trigger collective intelligence and are themselves the fruit of a collective intelligence process. Each seminar is designed in active collaboration with the client and with

partners, not according to some linear, compartmentalized sign-off process. As a result, WDHB has, year after year, consistently surpassed client expectations.

II. **In terms of management**, WDHB fosters collaboration through a culture of shared leadership, open-space offices and a collaborative intranet. This tool includes a learning center with jointly developed content, a collective-reflection and team-management help system, and a collective coaching module that enables the General Manager to work on skills she selects. Each member of the team performs a self-evaluation against a compendium of best practices (how to motivate, delegate, conduct meetings, etc.) made available to WDHB by a company specialized in publishing management-related content (theories, tools, methods). Team members then evaluate how well the content has been implemented within the team as a whole. Every Friday there is a 20-minute meeting in which team members exchange views not only on how well the content is understood and being appropriated, but also on how team organization might be improved. Since the reference content can be a source of conflicts when not everyone agrees, such discussions clarify relationships within the team and make them explicit. This in turn develops trust and enables the team to move forward together in the same direction.
As one member of the team explains:

> What's interesting about the collective coaching meetings is how it frees people to speak their mind. That freedom already exists implicitly, but it is during these meetings that anything dysfunctional within the team comes out. People feel relieved and are able to look for solutions together. This way, nothing remains latent too long. The key is that our manager works on the same content and does the same exercises right along with us! That makes everyone comfortable saying what they need to say.

III. Co-developing a collaborative contract with WDHB employees and stakeholders has helped clarify the mutual expectations of members of the organization and is now embedded in WDHB culture (which includes being explicit about its values, its culture). The contract includes a preamble that describes the values and beliefs of WDHB (e.g. Give and take, Service, Exploration & Innovation, Goodness in Human Beings). These values were collaboratively defined three years ago. The process of getting this contract signed is giving the manager an opportunity to explain the values of the company, bringing out the real meaning behind the words. The contract also comprises three articles describing the individual and collective cooperation processes used within WDHB and how that cooperation is evaluated in the context of the annual performance review. Article 1 includes the list of cooperation behaviors that WDHB expects of its employees (e.g. "I agree that my ideas can be evaluated, countered or transformed through discussions and disagreements regarding the company's business activities"). There is also a list specifically geared toward external partners. Article 2 contains a 6-step process used as a guide for individual, collegial and collective action. Article 3 defines how evaluations are conducted (e.g. indicators, observations) as well as how results affect the performance contract (individual objectives) and the collaborative contract (adherence to Articles 1 and 2).

C. The process by which collective intelligence emerges

Of the three pillars on which the intelligent enterprise stands, collective intelligence is usually the one most neglected. This is because creating, implementing and developing CI is highly complex. In contrast, KM appears simpler (but only on the surface!), so numerous KM projects have been launched. Information and collaboration technologies are rational, objective, and measurable…and intranets are developing rapidly.

Collective intelligence poses a problem because it enters the realms of the social, human, and psychological, and hence the irrational. In the face of such uncharted territory, our natural tendency is to turn and run! People shy away from collective intelligence because they think it will rob them of control.

The process for building collective intelligence within an organization can be presented either from a logical standpoint (to understand the stakes) or from an operational perspective (to take action). Here is the logical process:

Step 1 Want to cooperate	Step 2 Know how to cooperate	Step 3 Have means to cooperate
Establish a collaborative contract that fosters a culture of collective intelligence	Provide training in the techniques of managing collective intelligence in order to implement that culture	Utilize software, hardware, & networks to perpetuate that culture

Step 1 is the culture, steps 2 and 3 serving to implement and perpetuate that culture. Yet people feel more "comfortable" starting with step 3 and working backwards, in which case it is just a matter of time before the initiative will fail. But can you really waltz into a company suggesting that it change its culture? It is easier for outside consultants and in-house managers to propose a new software package with training on how to use it (step 3), ignoring or minimizing the importance of behavioral change (step 2, which involves training) and culture (step 1, which involves committing to new values).

People go on the premise that the behavioral skills and culture already exist. How can they not, since it is politically incorrect to say that people are uncooperative? Wouldn't admitting the need for steps 1 and 2 be for management to admit that the organization's culture is one of non-cooperation? What manager or consultant would approach executives with the recommendation that the company change its culture to establish one of collective intelligence when, as far as everyone is concerned, such a culture supposedly already exists?

What a minefield! You cannot tell people they are not cooperating when they think they are, even if every passing day proves the contrary . . . So the irrational psychology of the situation ultimately dictates dispensing with steps 1 and 2, because one cannot assert that they are necessary! Saint Prozac, come to our aid ;-).

Furthermore, consultants who have pioneered collaborative contracts report that taking the steps in order, beginning with step 1, stirs up a lot of resistance because people perceive the collaborative contract as a worthless, useless bureaucratic procedure—"yet one more thing we have to do!" In a sense they are right: establishing a collaborative contract does not make sense if it has no grounding in reality. What use is a collaborative contract without a collaborative intranet and without knowing the advantages of collective intelligence and techniques for managing it? There would be no way of measuring what was gained. For the collaborative contract to be meaningful, people have to experience the software, hardware and networks and know at least one or two management techniques.

A different process is thus needed to build the desire, know-how and means to cooperate at the same time, the flex being in the pace of implementation. As to logical progression, the number one priority will, paradoxically, be to develop the means to cooperate so that know-how acquired will be meaningful and in turn give meaning to desire generated.

The following matrix explains operational process of change management for creating the CI pillar of an intelligent enterprise:

	Now	Cycle 1	Cycle 2	Cycle 3	Future
Priority #1 Have means to cooperate	Social contract based on non-cooperation				
Priority #2 Know how to cooperate					
Priority #3 Want to cooperate					
Performance Obtained	CP < Σ IP	CP = Σ IP			CP > Σ IP

The key point is that the desire, know-how and means to cooperate must be developed in parallel. Initiatives on all three are launched at the same time, but the ramp-up on capacity is very quick, followed by intensified focus on know-how, and finally desire, as shown by the three cycle-1 arrows in the preceding table:

These arrows symbolize the Means, Know-how, and Desire to cooperate. Action on all three starts at the same time in cycle 1, but work on the Means is completed first, followed by the Know-how, and finally the Desire

Means	Know-how	Desire
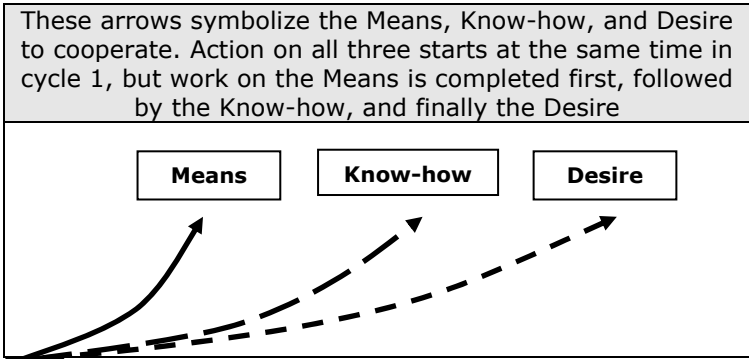
The means for cooperation will largely be in place by the end of cycle 1, then sustained throughout cycles 2 and 3. The cooperation know-how will be well established by the end of cycle 2, as will the desire to cooperate by the end of cycle 3.

Today's social contract is based on a logic of non-cooperation, which results in a collective performance (CP) that is less than the sum (Σ) of individual performances (IP): CP < Σ IP.

As collective-intelligence management is implemented over the course of these three cycles, collective performance very gradually approaches the sum of individual performances (CP = Σ IP) and then surpass it once the means, know-how and will to cooperate are all in place (CP > Σ IP). This is when gains in productivity start being realized, provided that the other two pillars of the intelligent enterprise (KM and technology) have also been built and are as strong as the collective intelligence pillar we have been discussing.

How long each cycle lasts depends on the size of the company, ranging from two to four weeks for a very small company, and six to eight months for a very large one. In any event, it is best that the project not last longer than 8 months, so that it not get bogged down and thus fail.

Here is the same matrix listing what actions might be initiated in each cycle:

	Now	Cycle 1	Cycle 2	Cycle 3	Future
Have means to cooperate	Shift mental framework of CEO and executive team	Set up a collaborative intranet and provide training on the software	Track and gradually adjust systems operation and organization		Evaluate results against employment contract and collaborative contract
Know how to cooperate		Do content reading on managing collective intelligence (e.g. books, articles)	Train and coach people in collective-intelligence management techniques	Perform follow-up and 360° evaluation	
Want to cooperate		Announce future establishment of a collaborative contract	Present a sample collaborative contract	Co-construct then sign the collaborative contract (reflect and consult)	
Performance obtained	CP < Σ IP	CP = Σ IP			CP > Σ IP

The various aspects of this process are discussed in depth in chapters 6 (Want to Cooperate), 7 (Know How to Cooperate), and 8 (Have the Means to Cooperate). Vincent Iacolare, Frédéric Lévy and François Lorek of the Altran Group also emphasize that a concrete action plan must be developed to manage the process of building collective intelligence. It is important to define the "what" (what actions for implementation), the "how" (the software/hardware/network tools needed to optimize and facilitate work), and the "who" (people who have the skills to use the tools effectively).

Executives should make establishing the pillar of collective intelligence a priority, because this lays the foundation for building the KM pillar in favorable conditions. People will not effectively use electronic document management software, for example, unless they are already committed to cooperating and have been trained in the new behaviors such a commitment implies. **Capitalizing or sharing information requires cooperation.** In a culture of non-cooperation, there is no reason to capitalize or share information. One of the reasons why KM initiatives fail one after the other, regardless of the technological and financial resources invested in them, is because they are not supported by a collaborative contract and training in collective-intelligence management techniques. The CI pillar must thus be erected before the KM pillar, which requires intellectual cooperation to function effectively.

The whole point of creating an intelligent enterprise is to achieve a collective performance greater than the sum of individual performances. This requires the three pillars of CI, KM and technology. But collective performance will never outpace the sum of individual performances if the only behaviors an organization expects of its people are acts of management, communication or negotiation, if the cooperative behaviors it prescribes are not defined in a collaborative contract, or if one pillar is emphasized more than another. Unintelligent—i.e. purely industrial and commercial enterprises that do not evolve toward intelligence—will soon find it increasingly difficult to compete.

Case study: Altran Group

This case study was co-written by Vincent Iacolare, Frédéric Lévy and François Lorek who manage the know-how capitalizing networks of the Altran Group. It retraces the path this company has taken over the past five years to become increasingly intelligent. Their pragmatic approach was to create a network of communities with the desire, know-how and means to be able to cooperate.

Most companies today are facing changes that require ever-greater knowledge found throughout the company and outside of it. To make those changes, organizations have to be able to act

quickly, and continuously adapt. Faced with this new environment, Altran has in recent years become a company able to grow by continuously evolving homogeneously at a faster pace.

In today's environment, everyone's intelligence must be pooled in order to fertilize knowledge. Collective intelligence seems to us an appropriate response that will enable the company to become an intelligent enterprise. Every day we see collective intelligence materialize through dynamic networks of interacting human beings able to affect structural change.

What follows is (I) the two-phase action plan we followed to create the Altran intelligent enterprise, (II) the results achieved as evidenced by a few figures and people's comments, and (III) a few of our best practices for mobilizing collective intelligence.

I. The process of building the collective intelligence of the Altran Group

We have been modeling our intelligence-enterprise practices over the past five years. The process used to build collective intelligence consists of two phases:

Phase 1: Identify the manager with the highest collective-intelligence potential within an entity.
Phase 2: Develop and firmly establish a collective spirit within that entity.

But there are two pre-conditions for implementing this process:

1st condition: Create a core

The team that will serve as the core of the intelligent enterprise first has to be selected. At Altran, the team selected was, among others, the "Quality-Organization-Information Systems Coordination Group" for the following reasons:

- Quality, organization and information systems are mutually complementary cross-cutting, functional activities that lend themselves to a collective approach.
- The people in this department had already demonstrated collective-intelligence potential.

2nd condition: Involve top management in the objective and requirements

Once the core has been identified, the objective to be attained and the requirements to be met must be identified with the involvement of top management. In our case, the **objective** set by top management was as follows: create consistency across quality practices, organizations and information systems throughout the group through shared effort and without imposing anything.

For a group like Altran, which includes 180 companies around the globe, the key is to involve without dictating, and to take local constraints, especially cultural ones, into account. The requirements defined by top management were:

- A customer-service focus aimed at invoicing group-companies for services at cost-price. Depending on their needs, companies can decide to use the services of the group or those of an outside provider.
- Self-financing cash flow based on the invoicing of services provided by the network.
- Networking to capture best practices, remain as close to the field as possible (all companies), and deliver efficient services by mobilizing local resources.
- Project-based achievements that highlight the value of collective efforts.
- Anticipate and innovate: everyone engaged in active development watch in different areas, investment being proportional to the stakes and to current and future projects.
- Respect for the individual (not force people into a single mold). Differences are what enhance collective intelligence—they must be encouraged!

Here is the process that can then be implemented:

Phase 1: Identify the manager with the highest collective-intelligence potential within an entity

This manager acts in the operational role specific to his/her business, but must also model and deploy the intelligent enterprise. This is done by developing a collective approach in the following ways:

- Formalize services (at Altran, this has meant providing off-the-shelf packaged services in order to meet various needs in a flexible, customized way).
- Formalize processes and after-action reviews focused on behavior and management. (At Altran, this has resulted in a 4-part catalog of best practices: knowledge, know-how, personal development and sharing. (See point III for a few examples.)
- Identify and train 3-5 future collective-intelligence managers in these services areas. The goal is to create an initial local collective that can then support other collectives.
- Develop a competition and hot-topic watch on these services, foster external partnerships such as with customers and vendors, and lobby (external collective-intelligence).

Phase 2: Develop and firmly establish a collective spirit within that entity
The managers who emerge during the phase 1 can then develop and firmly establish a collective spirit in the following ways:
- Identify "high potentials": Spot collectively-oriented people around them.
- Mentor new high-potential people: make them aware of the advantages to everyone of a collective approach, sharing, and mutual assistance. The manager must then, through concrete actions and examples, dispel doubts, fears, and roadblocks to sharing and trust.
- Gradually involve others: collective-building managers gradually involve new people in concrete actions that follow the give-give/win-win principle and embody the collective spirit.
- Integrate through coaching: the manager must coach the people he/she integrates into the collective. This involves providing them continuous and appropriate monitoring in order to transfer them the appropriate capitalized best practices and make them thus be efficient within their involvement within the collective. This results in continuous mutual enrichment.

Each new participant in the collective takes advantage of and relies on the services, potential, developments-watch, and networks of the others. New managers engage with all of the others to define strategies and make decisions affecting the collective (collective intelligence of the network). In turn, the new managers become coaches for new recruits.

Steps 1 and 2 are infinitely iterative until they come to embrace the entire company. But after three to five iterations, it becomes evident that tools are needed for information sharing, collaborative work, telecommuting and so on. We use two categories of tools:
- An internally developed collaborative work platform,
- "Contact facilitator" type applications for knowing who's who in the collective, capitalizing knowledge, and for project collaboration space.

These tools are not the end-all-be-all. But with just a few clicks they enable any agent in the collective to find people, resources, experiences, projects, up-to-the-moment developments and other elements that best match a particular need. The people identified can then simply be contacted directly to jointly resolve the problem or meet the need.

II. Results attained

1. A few figures

After 5 years of intelligent-enterprise prototyping at Altran, here are a few figures that illustrate where things now stand:
- 130 consultants functioning "collectively" (51% outside France). This means that among themselves they share everything, put everything in common, and help each other out. It's like a big, tight-knit family, which sometimes risks appearing closed from the outside.
- These consultants include 17 collective-intelligence managers who coordinate and facilitate the network.
- 5,200 man-days of projects conducted "collectively" in 2003 (over 13,000 man-days over 5 years)
- Over 650,000 euros saved in 5 years by applying these methods, which avoid waste by optimizing solutions and enabling good choices—the right investments at the right time and right price.
- 416 man-days in 2003 devoted to the overall capitalization, positioning and mentoring of consultants.
- Capitalized technical knowledge and know-how consisting of more than 4,800 basic elements (expert know-how, new developments, lessons learned, technical proposal content, 95 model documents, 68 process sheets on piloting, follow-up, capitalizing for higher productivity, etc., and 78 off-the-shelf turnkey services).

2. Reactions

Mobilizing and implementing collective intelligence in a company is a long, complex, and ever-changing operation. But how satisfying it is to see initial benefits being reaped. We can now not imagine working any other way. It's in our bones, integral to the way we think. Here is what some of the people we have worked with have to say:

- Jean-Pierre, collective consultant, employed by an Altran company in Strasbourg:
  "When I express a divergent view or a different direction, my opinion has never been rejected by consultants in the collective, to the contrary" ; "No matter how I behave, the person I am

interacting with remains imperturbably respectful." ; "I knew that I was not alone and that immense knowledge (knowledge base and especially a pool of experts) was backing me up, was with me." ; "Even if the person I am talk with says he's overloaded with work, I have the feeling that he is completely focused on my problem and isn't letting any preoccupations break or diminish that concentration."

- Collective work also brings discovery: "Logistical problems during my exchanges (time difference, computer access, software compatibility, languages, etc.) were such that I didn't always know the date/time of the next synchronization or delivery or how it was going to work." ; "The method of document review/rewriting did not go well. I had established rules that were not followed and made us lose time." (Perhaps talking about it orally would have avoided misunderstandings.)

- The following comment by a sales manager at a Group company in Paris illustrates the perception of an "internal client" outside the collective: "What struck me the most was the professionalism of the collective consultants, their whole approach being to optimize the project and establish mutual trust."

The next few comments illustrate the mindset that emerged within Altran:

• "Thank for your very complete audit guide which I am sure will help me zoom in on specific technical topics. I will be sure to contact you if a need arises; I have carefully saved your contact information. My Network is fantastic!"

• "The 'quality benchmarking' project for which I had called on experts in the network is launching this afternoon at a good price. The documents that were sent to me and the advice of experts in the network really helped me win the project."

• "Question: How is it possible to conduct 7 internal quality audits in 3 days, including drafting the report, for a standard I knew little about, after having been notified only the day before? Answer: thanks to the support of the network, some good reflexes, a bit of experience, a laptop, and very short nights!
Experts in the network responded immediately to my "SOS" with more than the information I had requested. . . we got the project on favorable terms. I would say the fact of knowing that the network is reactive and really there when needed reassures me and enables me to more confidently say YES to clients more often."

• "It takes time to create a different mindset and is nearly impossible (so much the better, that's life!). It surprises me that our network always works. It is full of good intentions, good practices, and good accomplishments. Even though the "do it quick" and "do a lot with little" aspects can veer off toward very dangerous behavior and scare me, they are balanced by the strategy aspect, long-term strategy, of course, as the word *strategy* should always imply. Despite a few minor disappointments, I can see that the Network is slowly but surely building a cohesive and powerful company spirit that corresponds with what I like most about being an engineer."

• "On the technical level, for me, the Network offers a fabulous opportunity for development given the diversity of people, profiles and experiences united around a single philosophy. I mean my own personal development, development of the company, and development of the Group. It also helps with personal reexamination, which is a factor of success and advancement. On a business level, the companies within the Group can call on the network and the Network consultants to optimize how they do business and improve consultant rates, thus improving their positioning."

• "Keep making me drink in your delirious ideas… I get the feeling that only those who dare let themselves get sidetracked by crazy ideas happen upon unexplored avenues. That is what I appreciate about working with you. Let's move forward together, synchronizing with each other as much as possible to exponentially improve our performance."

III. A few of Altran's best practices for mobilizing collective intelligence

Here are some of the best practices we use to mobilize collective intelligence on a daily basis:

- Role playing: Before any important communication or meeting, the person concerned does one or more role plays with one or more managers. They simulate the action to prepare the person and put him/her at ease in the situation.

- Constructive criticism: At least two members of the network comment on every document, file, report, etc., starting with the strong points followed by areas for improvement.

- The "decision-making file": A file that structures the brainstorming process to get ideas, evaluate them, structure them, and make decisions. It is a method for mobilizing collective intelligence.

- Give-give/win-win: Before an action begins, those involved all make a matrix (a row for each participant and 2 columns, "give" and "win") to ensure that the relationship will be balanced in action for everyone.

- Personal relationship and interaction: Foster face-to-face interaction and communication among people. For us, the human aspect is fundamental. We systematically prefer oral communication (face to face, video conference, telephone) to electronic communication (documents, email, etc.)

- Incubation: People in the collective share everything among themselves, even with those they don't know. To maintain this spirit and mutual trust, it is important to ensure that those who want to join the collective truly have the same attitude and share the essential values. This is the purpose of the incubation, a kind of test period during which the person's behavior speaks volumes about their underlying attitude.

This case study shows another approach to fostering collective intelligence. Other companies may use it as a model or to identify the human resources needed to implement the process presented in this chapter for establishing the desire, know-how and means to cooperate. Let's hope that many other processes exist for building collective intelligence. If you know of any, share them!

Chapter 2
Becoming a Manager of Collective Intelligence

"People care about the decisions you make, but they care even more about the process you used along the way" Chan Kim & Renée Mauborgne, Professors at INSEAD

Development of intellectual cooperation raises the issue of the manager's role in implementing CI and KM. In Europe and North America in particular, management has been primarily individual; in the future, it will take on a truly collective dimension. In an article published in the Harvard Business Review (January 2003, p. 127), Chan Kim and Renée Mauborgne discuss the notion of "Fair Process." Based on case studies of 19 companies, they show the power of the process leading to a decision:

> Managers who believed the company's processes were fair, displayed a high level of **trust** and **commitment**, which, in turn, engendered **active cooperation**. Conversely, when managers felt fair process was absent, they hoarded ideas and dragged their feet. […] Fair process responds to a basic human need. All of us, whatever our role in a company, want to be valued as human beings and not as "personnel" or "human assets". We want others **to respect our intelligence**. […] People are sensitive to the signals conveyed through a **company's decisionmaking processes**. Such processes can reveal a company's willingness to trust people and seek their ideas – or they can signal the opposite. [emphasis added]

Trust is central to generating "active cooperation," and trust results directly from the dominant mode of management within the organization.

A. Individual and collective management: Creating trust

Individual performance might have been (almost) enough for industrial and commercial companies, but no longer suffices for the intelligent enterprise. Collective performance is becoming a decisive factor in the sustainable development of a company.

Individual performance and collective performance together contribute to overall performance. They depend on desire, know-how and means.

	Individual Performance (IP)	**Collective Performance (CP)**
Desire	Motivators (e.g. recognition, responsibility, security, ambitions)	Culture of collective intelligence (values of sharing, respect, and responsibility)
Know-how	Professional skills (technical and behavioral)	For everyone in the collective: interpersonal skills For managers: collective-intelligence management skills
Means	Organization, operation (e.g. procedures, methods, tools) & technologies	Strategy, tools & collaborative technologies

Management plays an essential role in developing the overall performance of an organization at both the individual and collective levels. As collective performance develops, everyone gains the means they need to outperform their individual objectives.

Reacting to the above statement in an online collaborative-space discussion, Thomas di Luccio, one of the participants, asks:

> I agree that achieving collective performance means each person can outperform his or her individual objectives. But take the case of a Taylorian manufacturing company that requires each of its workers to produce 100 widgets an hour. Under pressure, they produce 105 widgets/hour. The workers have (for a limited time) exceeded their individual objectives. In this example, each person exceeds their individual objectives, but can you really say that collective performance has surpassed the sum of individual performances?

To answer this question we have to go back to the very emergence of humankind! In his book *Le management du 3ème millénaire*, Michel Saloff-Coste describes the four waves of human civilization. Three million years ago, our life was based on hunting and gathering. The age of agriculture and livestock began 30,000 years ago and the age of industry and commerce 300 years ago. Finally, today, we are entering the age of creation and communication (advent of the information society). Let us take a look at what individual performance and collective performance have meant during each of these four waves of civilization so that we can appreciate the importance of how they are evaluated.

How should individual performance and collective performance be evaluated in an information society?

Individual performance evaluations are useful in that they make it possible to compare the respective performance of individuals against each other. The same is true of collective performance evaluations—they make it possible to determine which collective, among those that exist, is performing best. Comparing the performance of individuals and collectives enables us to know/predict/decide who will move up, who will move down, who will live, who will die, etc. The following table traces how performance evaluation methods and consequences have evolved:

Hunting/Gathering (primitive enterprise)	Determining individual performance was very easy: someone went hunting and brought back game. A hunter who returned empty handed wasn't performing! Collegial and then collective actions developed among our ancestors because they realized that they could hunt more effectively as a group than alone.
Agriculture/Livestock (agrarian enterprise)	Individual and collective performance were simply measured by the quantity produced individually and collectively.
Industry/Commerce (industrial and commercial enterprise)	Performing means achieving the required objectives while optimizing the use of resources provided (concept of efficiency). It is evaluated based on primarily quantitative individual objectives (production or sale of X products). As work became organized scientifically, individual performance standards could be more precisely measured, on a production line, for example.
Creation/ Communication (intelligent enterprise)	With knowledge workers, performance evaluation becomes very difficult. What criteria should be used to evaluate how long it should take to write a report? How can the quality of that report be objectively evaluated (without the content of the evaluation varying too much according to the personality of the evaluator)? The way in which quantitative and qualitative objectives are set and results evaluated is hence often arbitrary or subjective. Managers know it, that makes it difficult for them to manage their team based on individual performance.

The manager Thomas di Luccio talks about is working in the industrial and commercial age. He set the individual objective at 100. He then noted that each worker managed to produce 105 widgets instead of 100. You can bet that the next time around he will set the objective at 105. In this example, it cannot be said that collective performance has exceeded the sum of individual performances. The manager can merely compare the respective individual performances and note that **actual** collective performance was higher than the **expected** collective performance. Through

trial and error, the manager will be able to determine the optimum individual performance, which will be very hard to surpass.

Things aren't so easy for Creation-Communication age managers. As the table shows, creating collective performance represents a real challenge when it is hard to evaluate individual performance.

How can collective performance be made to exceed the sum of individual performances?

Based on our analysis of the preceding periods, the following table provides insight into the impact that the information society has had on the measurement of collective performance.

	PC < ∑ PI	PC = ∑ PI	PC > ∑ PI
Hunting/Gathering (Learn to survive)	Individual Action	Individual and collegial action	Individual, collegial and collective action
Agriculture/ Livestock (Learn to produce)	Individual production	Individual and collegial production	Individual, collegial and collective production
Industry/ Commerce (Learn to organize)	Artisan-type individual organization	Collective organization reproducing artisan methods on a large scale	Scientific organization of work (Taylorism)
Creation/Communication (Learn to cooperate intellectually)	Individual management or inadequate management	Individual and collegial management	Collective-intelligence management

This table shows that collective performance has not developed in the same way from one period to another. While some practices have proven effective down through the ages, others have become obsolete. Yet numerous companies today still use Industry/Commerce-era methods to evaluate and develop individual and collective performance.

In the **Industry-Commerce** age, IP had to be developed in order to develop CP. CP resulted from IP (individual performances added together to determine collective performance). Managers thus had to make **individual performance** the priority.

In the **Creation-Communication** age, CP has to be developed in order to develop IP. IP results from CP (CP divided to determine IP). Managers thus have to make **collective performance** the priority. This performance can be achieved only by mastering collective management (mobilizing collective intelligence and knowledge of one's team).

The following comparative table very broadly outlines the differences between individual and collective management:

	Individual Management	Collective Management
Tangible basis	Performance agreement	Collaborative contract
Key values	Work/Responsibilities, Recognition, Discipline	Harmony, Sharing, Responsibility, Respect
Purpose	Achieve results, set deadlines, define conditions, and allocate resources	Develop trust among team members and foster collective commitment to action.
Means	Forced bilateral cooperation	Voluntary multilateral cooperation
Behaviors	The manager acts as organizer and trainer; s/he sets objectives and assesses results	The manager acts as facilitator, "emerger"; s/he develops cooperation and cultivates innovation
Managerial Skills	Define tasks; assign tasks to competent, motivated individuals; track the accomplishment of tasks	Create the desire, know-how and means to cooperate; guide collective collaboration processes leading to collective action
Performance	Performance depends on the skill and motivation of an employee with respect to a given objective	Performance depends on collective skill and motivation, which is measured by the ability of a team to work together

Collective management is just as important as individual management. Sacrificing one for the other is a mistake. The art of managing is **knowing how to coherently articulate individual and collective management.** But sometimes one sees managers use a kind of **pluri-individual** management in the guise of collective management, such as when a meeting ends up being a series of individual exchanges. The manager goes around the table asking particular people questions of no relevance to anyone else present. Collective-management incompetence starts at the top. If a CEO does not manage his executive team collectively but according to a pluri-individual mode, he cannot expect the members of his team to do but likewise with theirs, all the way down to line staff.

The tangible basis for collective management is a collaborative contract, whereas the tangible basis for individual management is the performance agreement (the purpose of which is to implement the organization's overall strategy). For individual management, objectives have to be individual, otherwise, everyone would put the responsibility for achieving them on to others and assume no accountability for results . . . unless those results are good, of course! An individual objective creates individual responsibility, whereas a collective objective creates collective *irresponsibility*. (When everyone is responsible, no one is.) As for team management, it must be rooted in a collaborative contract and, of course, a business strategy which, by definition, is always collective.

The purpose of collective management is to develop **trust** among members of the team and to promote **collective commitment** in action. Such trust and commitment will emerge:

- if people are involved in the lead-up to decisions that will affect them—offering ideas, debating pros and cons,
- if, once a decision is made, the rationale for the decision, the "why," is explained so that everyone is assured that it was made in the interest of the organization (there will then be commitment even on the part of those whose opinion did not prevail),
- if, once a decision is made, the new rules of the game are made clear and understood by all.

Creating, developing and sustaining trust among people is key to a company's performance. One of the pillars of this trust is the management of collective intelligence. To illustrate how trust is created through effective collective management, Kim and Mauborgne offer this comment made by one participant in their study: "Since we know now everything that's going on in the company, we have more **trust** in management and are more **committed** to

making things happen. People have started doing things **beyond the normal call of duty**."
(Harvard Business Review, January 2003, p.136, [emphasis added]).

The above table also indicates that the **skills of a collective manager** are knowing how to create the desire, know-how and power to cooperate (each of which will be discussed in subsequent chapters) and knowing how to guide collective cooperation processes that lead to collective action. Yet these days it is difficult to keep a handle on the complex and unstable interactions between information and people in the context of intellectual cooperation and collective action:

- information changes upon contact with people, who interpret and distort it,
- information changes upon contact with other information, gaining or losing meaning through aggregation,
- people change upon contact with other people because of creativity, conflicts, resistance to change, and group dynamics,
- people change upon contact with information, modifying their behavior.

Named after the Greek word for "value," the following **AXIO matrix** clarifies and operationalizes the management of collective intelligence by providing a means of mapping the information and human interactions needed for effective action. But before analyzing the matrix, first take a moment to fill out the questionnaire in Appendix 1. Doing so will help you better understand the AXIO matrix and identify your own approach to managing intellectual cooperation.

Entity name: …………

Objective to be achieved: ……

Target date: …………………

AXIO	S1	S2	S3	S4	S5	S6
Players/ Operations	**Gather and share information**	**Reflect (interact on the information)**	**Consult (Prepare for decision)**	**Decide**	**Capitalize and share information**	**Act**
Collective (Everyone)	Collective research	Collective intelligence	Consult all stakeholders	Collective decision	Collective Knowledge Management	Action directly or indirectly involving everyone
Collegial (sub-group)	Collegial research	Collegial intelligence	Consult some stakeholders	Collegial decision	Collegial Knowledge Management	Action directly or indirectly involving some of the collective
Individual (one person)	Solitary research	Individual intelligence	One person	Solitary decision	Individual Knowledge Management	Action involving one person
Time frame	Deadline	Deadline	Deadline	Deadline	Deadline	Deadline
List of participants	Who searches?	Who reflects?	Who gives opinion?	Who decides?	Who manages the information?	Who acts?
	John Smith Jane Doe …..					
Workload	No. person-days	No. person-days	No. person-days	No. person-days	No. person-days	No. person-days
Tools-methods	Software, meetings, etc.	Software, meetings, etc.	Software, meetings, etc.	Software, meetings, etc.	Software, meetings, etc.	Software, meetings, etc.

Note: To diagnose your own management practice against the AXIO matrix, take the Appendix 1 questionnaire you filled out and turn it sideways 90°

B. How the collaborative process (AXIO matrix) works

Some people may be surprised to find Knowledge Management in step 5 rather than in step 6. Yet KM is, to varying degrees, part of every one of the steps. For instance there is a KM dimension to S6 (Act) in the capitalization of lessons learned from after-action reviews. KM has been placed in step 5 because that is how the knowledge created in the 4 previous steps is capitalized and shared. If you put KM in step 6, it may dissipate in the heat of the action.
Also, in step 3, it is the stakeholders of the collective (people outside the team) who are consulted, not the collective itself (in contrast to the other columns of the matrix).

Five rules underpin the AXIO process:

Rule 1: Select a clearly defined entity

Select the **entity** to serve as the frame of reference for defining the corresponding individual, collegial and collective levels. The point is to be able to list everyone included at the collective level (whether that means 10 people or 10,000). Once the collective has been defined, the other levels (collegial and individual) can be deduced.
Note: If you manage several entities, you are managing several teams. The entity must correspond to a single team in which **all members regularly engage in collective action**. People who organizationally come under the same decisionmaker or who rarely work together do not constitute an entity. An entity is made up of people who regularly work together.

Rule 2: Define the target objective

Define the **objective to be achieved**, including the specific outcome sought, the target date, conditions (quality and other), and the resources available. This step of defining the objective is crucial to properly framing the problem. In fact, it is so important that it can be considered an objective in and of itself. Everything subsequent to defining the problem will be affected by the quality and pertinence of that definition.

Rule 3: Follow each step of the process

Follow **every step in the process,** from gathering information (S1) to taking action (S6), **in order**. However, every organization will need to make adjustments according to its operating procedures and culture. The Decide column (S4), for instance, might be subdivided into three: validation of the proposed decision, decision, and decision veto. Column S6 might be subdivided into four columns: announcement of the decision, training, action, and learning from experience.

Rule 4: Define the appropriate level

Select the **most appropriate level of action (individual, collegial or collective)** for each step according to the **resources** available (human, financial, technical, software, etc.), the **environment** (a collective culture has/has not been established), structure of the entity, the organization's relations with stakeholders, etc.), and the **target date** by which the objective is to be accomplished.
For example, if the action is a collective one, the most appropriate and preferable level for reflection would also be collective:

Steps	S1	S2	S3	S4	S5	S6
Players/ Operations	**Gather and share information**	**Reflect**	**Consult**	**Decide**	**Capitalize and share information**	**Act**
Collective (Everyone)	Collective research	Collective intelligence	Consult all stakeholders	Collective decision	Collective Knowledge Management	Collective action
Collegial (sub-group)	Collegial research	Collegial intelligence	Consult some stakeholders	Collegial decision	Collegial Knowledge Management	Collegial action
Individual (one person)	Solitary research	Individual intelligence	One person	Solitary decision	Individual Knowledge Management	Solitary action

If the action is collegial, it is preferable that the related reflection also be at the collegial level:

Steps	S1	S2	S3	S4	S5	S6
Players/ Operations	**Gather and share information**	**Reflect**	**Consult**	**Decide**	**Capitalize and share information**	**Act**
Collective (Everyone)	Collective research	Collective intelligence	Consult all stakeholders	Collective decision	Collective Knowledge Management	Collective action
Collegial (sub-group)	Collegial research	Collegial intelligence	Consult some stakeholders	Collegial decision	Collegial Knowledge Management	Collegial action
Individual (one person)	Solitary research	Individual intelligence	One person	Solitary decision	Individual Knowledge Management	Solitary action

It is during the reflection stage that people grasp the meaning of an action, and this understanding is what elicits a collective desire to act.

If the action is to be *collective* but the reflection is *collegial*, you run the risk that those who did not participate in reflection will remain **neutral**, and that this neutrality will manifest in **immobilism** (indifference, doubts or skepticism about whatever decision is taken for lack of sufficient knowledge or understanding to take a position) or **inertia** (half-hearted consensus on action).

If the action is to be *collective* but the reflection is *individual*, you run the risk of **opposition**. The action will meet with more-or-less entrenched resistance (because people see it as senseless, lack information, have their own personal agendas, etc.)

Despite these risks, steps 1-5 are typically performed at the individual level, and only then brought to the collective or collegial level for action. Consider your own practice in this regard by noting which boxes you checked in the Reflection (S2) and Action (S6) columns on your self-diagnostic questionnaire (Appendix 1).

Rule 5: Stick to the key focus of each step

None of these steps happens in isolation from the others. Decisions will have to be made during the reflection stage, and reflection will be needed during the decision stage. In other words, each column simply represents the **key focus,** the main activity that needs to be taking place at that point in the process of moving toward action (S6).

As these five rules show, AXIO is a process geared toward action. It helps produce quality decisions that will actually be implemented, as opposed to a semblance of action and endless conflicting decisions resulting in one big mess: order, counter-order, disorder (*ordre, contre-ordre, désordre*)!

Chapter 4 explains how to put the matrix into practice.

C. Impact of a collaborative process

The impact of the AXIO approach depends on the management-level, culture, environment, and field in question.

- Level of management
The higher the level of management, the more actions and decisions become complex and CI becomes essential. But it is at the bottom of the hierarchy, at the supervisory level for instance, that AXIO will be used most extensively, because this is the level at which teams are small enough for the approach to be practical (for reflection meetings, formal and informal consultation of team members, etc.). Large-scale collective reflection is nearly impossible without the support of technologies and the investment of significant financial resources.

- Culture
Traditional hierarchical and vertical cultures try to minimize the collegial and collective. Modern cultures seek a balance, which they call "participatory management." Creative cultures (or cultural creatives) are comfortable working at all three levels (collective, collegial and individual).

- Environment
The harder a situation, the deeper a crisis, the more collective approaches will be pushed aside, even though this is precisely when everyone is urged to make a *collective* effort! Caught up in the crisis and seized by fear, managers dismiss reflection as a waste of time and see the collective as dangerous—if people are brought together to reflect they might revolt against management. . . . In times of crisis, irrationality prevails. Yet it is in these moments that collective reflection should be encouraged the most.
Urgency drives people away from CI, because they think it will take longer. But the following ideal "shortest" path can be taken:

Steps	S1	S2	S3	S4	S5	S6
Players/ Operations	**Gather and share information**	**Reflect**	**Consult**	**Decide**	**Capitalize and share information**	**Act**
Collective (Everyone)	Collective research	Collective intelligence	Consult all stakeholders	Collective decision	Collective Knowledge Management	Collective action
Collegial (sub-group)	Collegial research	Collegial intelligence	Consult some stakeholders	Collegial decision	Collegial Knowledge Management	Collegial action
Individual (one person)	Solitary research	Individual intelligence	One person	Solitary decision	Individual Knowledge Management	Solitary action

The collegial and collective levels are minimized so as to move quickly to action while limiting the risks of failure. This is crisis-mode AXIO!

- Field
Agricultural companies operate mainly on the individual level. Industrial companies place greater importance on the collegial while remaining based in the individual (the boss). It is in the service sector that we are beginning to see collective notions that are more or less collegially based (participation, delegation).

AXIO simplifies reality so everyone can grasp it and helps create a **common vision**, which in turn serves as a common framework for action. As illustrated by the impacts that management level, culture, environment and field can have, AXIO must be used "intelligently," that is, in direct connection with the matrix-user's reality.

AXIO should not be viewed from a negative standpoint as a tool to reduce or eliminate error, but from a positive angle as a tool to develop responsibility, creativity and adaptability, and as a way of ensuring good decision implementation by reducing resistance to change and creating a collective desire to act.

Chapter 3
Accelerating and Optimizing the Decisionmaking Process

There are essentially two decisionmaking processes: bring different people together at different stages to arrive at a decision (AXIO process), or decide on your own in order to expedite a solution. Decisionmakers who opt for the second approach are taking risks.

Decisionmaking requires analysis of a sum of information. If the information gathered is qualitatively poor or quantitatively insufficient, a bad decision may result. Information gathering, reflection, and consultation make it possible to gradually improve the quantity and quality of information from no information to raw, scattered information, to coherent information that will be validated, to complete, intelligible and validated information that provides the basis for a decision and that will be capitalized. The path to such results is largely collective and collegial.

Members of an organization have the **right to reflect.** Better yet, they have a **duty to reflect!** But never fear: people naturally reflect whether they are asked to or not. Why then do certain managers resist? Why does the Lone Ranger approach to decisionmaking prevail?

A. Why do some managers resist collective reflection and consultation?

Theoretically, managers should have everything to gain by mobilizing the knowledge and collective intelligence of those around them. But usually they resist doing so. Here are the primary reasons why:

- Common interest vs. personal interest
Some managers fear that if they accept support from the collective through reflection or consultation, ideas and suggested decisions they don't like may emerge, making them have to explain why those contributions were disregarded. Reflecting together brings great transparency, which is uncomfortable for people who fear they will be forced to make decisions that, while in the best common interest, go against their own personal interests.

- Psychological insecurity
Managers may view collective intelligence as a challenge to their own competence, experience and independence. It comes as an attack to their ego, their self-image, their way of thinking. It is as if they were being told: "You are incapable, you are lousy, that is why you need others to help you."
Furthermore, they may feel like they are being thrown into an arena, into a den of lions, where they will be obliged to present and defend their ideas, laying them open to critique. Any challenge to those ideas or having to argue their merits is experienced as a **criticism of** *them*, **as a personal attack.** To attack their ideas is to attack them personally.
Such managers are **afraid.** The prospect of discussion makes them anxious and creates intense psychological insecurity. This is particularly true of people who lack self-confidence, cannot take criticism, and are preoccupied with upholding their own self-image as well as their image in the eyes of others. Having constructed their own copasetic version of reality starring themselves as they would wish to be rather than how they really are, the last thing they want is for collective reflection to make them have to face a different reality.
When it comes down to the psychological, exhortations and rational arguments are useless. For instance, if what has just been said corresponds to your own behavior, you will feel that it does not concern you at all. In fact, no one will feel that what has just been said describes them personally, but you can undoubtedly think of people around you who fit the profile—which doesn't exactly work out statistically! This is where upper management can, for example, provide coaching to help such people overcome their managerial fears.

- Jeopardy to a vertical culture

Accepting that managers may need the intelligence of their subordinates for reflection calls their authority, status and power into question. Certain subordinates, discovering their ability to reflect, may even start lusting after their manager's job.

Such inclusion attacks the vertical culture in which everyone positions himself within a formal or informal hierarchy that frames social relations. Either you are above, or you are below, and everyone has to stay in his place. In such a culture, it is difficult to ask someone to step down to the level of those a rung below, or to invite them up to his own. That would put them on the same footing.

Managers who reflect and decide all on their own just have to make sure they do not make the wrong decision. But the moment a collective is mobilized, they become at least minimally accountable to the group, owing it explanation. On its face, this obligation is very useful, because it compels managers to reflect more deeply and help people appreciate the rationale behind a decision so it will be implemented effectively. But while managers may recognize what they could gain in terms of quality decisions, they fixate on what they stand to lose straight away: the power associated with their position in the vertical hierarchy. Besides having to share some of their power with "lower-downs," they will also become accountable to them.

The shift can be rather brutal: One day the manager must justify his decision to higher-ups after the fact, and then usually only if something goes wrong. The next, he has to justify his decision to his subordinates even before having decided. Isn't that all backwards? Especially if a decision consensus emerges during group reflection—then the manager will feel even more pressured.

B. Do decisions have to be made in favor of a consensus that emerges during group reflection?

The goal of collective reflection is not to force managers to decide in favor of a consensus. But they will undeniably feel all the more boxed in if **a consensus on what the decision should be** happens to emerge. *Can* a manager make a decision that runs counter to the collective view of those he asked to reflect on the issue? The answer is *yes*!

A manager **can** make a decision that elicits opposition, because **organizations are not run by group consensus but according to a vision that the leader can get people to rally behind as a shared vision.**

Yet it is important that a manager first examine the reasons why people oppose the decision. Are the reasons behind it and what people individually and collectively stand to gain clear? Are the downsides being exaggerated? Or perhaps there has been inadequate communication. It is best to take a little time to explain during the reflection phase rather than in the thick of implementation when resistance is at its strongest.

But just because a manager *can* **go against the group,** *should* **he?** Being visionary does not preclude being pragmatic, taking the group's opposition into account. It is more than likely that those who are against the decision at the reflection stage will continue to oppose it in action. The manager must therefore carefully weigh the **stakes** of his decision. The right course may be to forcefully move ahead with a "good" decision. Or it may be to go with a "less good" decision backed by consensus rather than with an unpopular excellent decision that may prove short lived and hard to implement. The choice is up to the decisionmaker based on his cost/benefit analysis, in which it can be wise to include the cost of change-management consultants…or a strike.

The "clever" manager may be thinking, "Well there you have it: you shouldn't organize group reflection because there is a strong chance you won't be able to go with *your* decision but have to settle for one generally in line with the consensus that emerges in the group. Plus you'll have to justify that decision!"

But is that a good strategy? Such "clever" managers forget one important thing: **we don't need decisionmakers to help us reflect!** Every one of us is perfectly capable of thinking on our own.

There are two options: either you organize collective reflection or you do not organize it (in which case it self-organizes).

C. Organizing collective reflection

Organizing collective reflection means structuring it into a meaningful process around achieving a particular objective. It means information transparency: everyone has ready access to the information they need, can add to that information, and can dispute it. In this context, personal agendas are harder to push through. And you cannot tell people just anything; you have to think before you speak. People who participate in collective reflection move from trying to optimize their personal gain toward a common objective:

| **Personal gain** | → | **Common objective** |

D. Not organizing collective reflection

In this case, it would be more accurate to speak of **individual collective reflection**: *individual* because each person reflects on their own; *collective* because everyone reflects. This kind of spontaneous reflection revolves around personal agendas. Everyone thinks: "What's best for me?" The level of information people have is uneven, because most of the information used to come to a decision is not shared, but remains implicit, hidden inside the decisionmaker's head or stored on his personal hard drive. What information *is* available can easily be distorted, interpreted, and embellished because it is exchanged not in a public forum but in hushed voices during casual encounters in hallways. The decisionmaker will have a hard time discrediting false rumors, because he will not be able to put a finger on who said what when and why. By letting things take their own course, he loses control of the situation, of action, of the decision. Informational and relational anarchy can result. Those who participate move from the common objective toward optimizing their own personal gain:

| **Common objective** | → | **Personal gain** |

In short, **collective reflection occurs naturally**. If it is **organized**, it may produce collective intelligence. If it is **spontaneous**, the decisionmaker cannot control it, it is invisible, and it is hard to say what it will produce—collective intelligence . . . or something else? That is the question!

A similar situation occurs when stakeholders are consulted during step S3. People like to put in their two cents worth. Like for reflection, better that they give their opinion in a context of transparent, shared information (i.e. information that is complete, validated and the same for everyone), rather than at the coffee machine where disinformation and rumors are spread.

Skipping the collective-reflection step means losing the opportunity to get an advance read on the chances a decision will succeed, and thus being able to select the best of several possible decisions. **Collective reflection does not change reality, it gives you a preview of it.** It can reduce the time that managers have to devote to change management and enable them to focus on other activities of greater benefit to the company.

Collective reflection thus serves as a **social forecasting tool** that can give the decisionmaker insight into the social and human reality that may surround the decision he wants to take. It offers a kind of

laboratory where experiments approximating the real world can be conducted and the manager can, in a sense, see what will happen after the decision has been taken. Based on this future reality and the decision he settles on (supported or opposed), the decisionmaker will be able to develop an appropriate action plan for its implementation.

Hence, collective reflection can also be used as **tool for more accurately seeing into the future.** It enables decisionmakers to get a more accurate picture of how things will pan out once a decision is taken. Because information is shared, validated and relatively complete, the manager can better project himself into that future environment when making a decision.

To illustrate the how collective reflection can shed light on the future, here is a matrix automatically created by software in the context of a functional module designed to facilitate collective reflection and support decisionmaking. Each participant posts his or her contributions in response to questions posed by the decisionmaker and reacts to the contributions posted by others: I agree (Agree), I don't know what to think (Neutral), I do not agree (Disagree).

	AGREE	**NEUTRAL**	**DISAGREE**
High consensus	**Success** **Comment 4 of Smith** **Comment 1 of Jones** **Comment 2 of Taylor**	**Opposition to change** **Comment 3 de Smith** **Comment 2 de Jones** **Comment 4 de Johnson**	**Failure** **Comment 2 of Johnson** **Comment 4 of Ravet** **Comment 1 of Taylor**
Moderate consensus	**Possible success** **Comment 5 of Smith** **Comment 5 of Johnson** **Comment 6 of Taylor**	**Inertia** **Comment 1 de Ravet** **Comment 3 de Taylor**	**Strong resistance** **Comment 1 of Smith** **Comment 3 of Ravet** **Comment 4 of Taylor**
Low consensus	**Ambush** **Comment 3 of Jones** **Comment 1 of Johnson**	**Clash** **Comment 2 of Smith** **Comment 3 of Johnson** **Comment 5 of Ravet**	**Resistance** **Comment 2 of Ravet** **Comment 5 of Taylor**

High consensus would, for example, be 90% opinions in favor. Low consensus would, for example, be 50% opinions in favor and 50% against

In this example, Mr. Smith wrote several contributions. One of them is listed in the "Success" square (where high consensus and Agree intersect). This means that most of the participants agree with this particular contribution of his, which may be an analysis of the situation or a proposed decision. Smith's other contributions fall in various other square.

Contributions from participants (responses to questions posed by the decisionmaker) are categorized by taking the average of the *agree*, *neutral* and *disagree* positions and by calculating the standard deviation of that average (the consensus). This calculation yields 9 squares corresponding to 9 social realities. This matrix gives decisionmakers a real-time assessment of the future social reality likely to exist upon implementation of the decision they select.
This matrix could be used during the decision stage (S4) of the AXIO process:

Steps	S1	S2	S3	S4	S5	S6
Players/ Operations	**Gather and share information**	**Reflect**	**Consult**	**Decide**	**Capitalize and share information**	**Act**
Collective (Everyone)	Collective research	Collective intelligence	Consult all stakeholders		Collective Knowledge Management	Collective action
Collegial (sub-group)	Collegial research	Collegial intelligence	Consult some stakeholders		Collegial Knowledge Management	Collegial action
Individual (one person)	Solitary research	Individual intelligence	One person		Individual Knowledge Management	Solitary action

E. Solitary reflection and decisionmaking

Collective reflection becomes all the more essential given how damaging solitary reflection can be to the decision process. Potential consequences solitary reflection include the following:

- The decisionmaker will tend toward **decisions that resemble past decisions,** precedents that can be evoked to justify the decision if it turns out to have been a mistake. In this way, responsibility for the decision is transferred to the decision emulated. A more collective approach can reduce concerns about being judged. Gravitating toward decisions that emulate past decisions also seriously stifles innovation and creativity.
- Decisionmakers who reflect alone are constrained by **very deep, archaic and unconscious emotional factors** causing them to act not from any rational basis but out of dreams of greatness or omnipotence, narcissism, a rejection of authority, a fear of failure, a need for recognition, belonging or independence, etc. Some decisions can be deeply affected by the decisionmaker's own personal experiences reaching back to childhood, without him being even remotely aware of this influence. Studies have shown how such factors can lead companies to ruin (see "Combat contre l'irrationalité des managers", Manfred Kets de Vries, Editions d'organisation, 2002).
- If the decisionmaker has to decide again, he will tend to **stick with his initial decision** (theory of commitment) so as to protect his ego, not have to acknowledge his error, not experience psychological insecurity. In contrast, collective reflection leads to co-constructed decisions. As co-owners, all contributors will be intent on seeing the decision succeed and will modify it as necessary as the context evolves.
- A decisionmaker reflecting in isolation may **misread the situation** and **lack creativity** as he or she explores possible decisions. Those who reflect alone have fewer ideas.
- The decisionmaker may be **incapable of revising his decision as the environment evolves.** We all know that the appropriateness of a decision is directly linked to its contextual environment and that as soon as the environment changes, the decision must be adjusted accordingly. Those responsible for implementing the decision are the first to realize when it requires realignment, but if they have about as much autonomy as a robot, the chances are slim that they will suddenly take it upon themselves to propose a modification.

These consequences all argue in favor of collective or collegial reflection and consultation before making a decision. To read further on decisionmaking, see "Management & Conjoncture Sociale," Dossier La prise de décision, Summer 2003, No. 619.

F. Meeting the need for a more participatory management that develops people's potential

A decision based on solitary reflection and against popular opinion may later prove to have been an excellent one. But at what cost to the social climate, to people's motivation and confidence, to regard and recognition for those who will be affected by or have to implement the decision?

Have you ever heard a single person proclaim, "I have nothing to say. I don't want my opinion to be considered. **I don't want to be heard**"?

Who wants to carry out management decisions without having any say? Do you? Having a say, being included in dialog, does not mean wanting to decide in place of the decisionmaker. People simply want their manager to hear what they have to say. While not questioning the intelligence or status of the manager, they intuitively know that he or she is less likely to make a bad decision if everyone has had a chance to say what they think. Some people *do* want to unseat their manager, but the fact of listening or not listening to them will not change their ambitions!

Deciding constitutes but one step in the process of managing collective intelligence. Let us now map out that process in detail.

Chapter 4
Managing Collective Intelligence and Knowledge with AXIO

"The function of thinking cannot be delegated" Alain

This chapter shows how AXIO can be used as a model for managing collective intelligence and knowledge. Like any model, it can be a source of inspiration whether or not you choose to utilize any of it as such.

Before you can apply the matrix, you have to define the problem. This is crucial if you want to avoid discovering the "true problem" only long after launching step 1. Each step of the matrix is discussed in detail to help you implement it in your own organization.

A. Gather and share information (S1)

Steps	S1	S2	S3	S4	S5	S6
Players/ Operations	Gather and share information	Reflect	Consult	Decide	Capitalize and share information	Act

The gathering of information refers both to internal information (already capitalized as prior objectives were achieved) and external information (e.g. on the internet, in purchased market studies, at libraries). The information then has to be shared with those people who will be participating in the reflection stage, since discussion can hardly be productive without it. In fact, steps S1 and S2 could be overlaid or iterated.

B. Reflect (S2)

"A guru is a master thinker. But by force of thinking alone, what a guru often masters is the art of goofing up!" Olivier Zara

Steps	S1	S2	S3	S4	S5	S6
Players/ Operations	Gather and share information	Reflect	Consult	Decide	Capitalize and share information	Act

Reflection can be collective, collegial or individual. In general, people are good at reflecting alone, less good at reflecting as a group, and even worse at reflecting together as a whole collective. The problem is not simply one of competence or methodology, but a lack of appropriate collaboration technologies.

Whether the reflection is done alone or as a group, it is crucial that the decisionmaker actively participate throughout this stage, otherwise the outcome will not be meaningful to him. Integrating a collective dimension into reflection does not mean the decisionmaker can bow out.

Each of us brings strengths and weaknesses to any situation, a kind of **situational intelligence**. We are all more or less intelligent depending on the situation, not in any absolute sense. This means that decisionmakers should designate who will participate in a particular *ad hoc* reflection group according to the situation at hand, and not appoint a standing committee responsible for all reflection.

Reflecting means asking questions and seeking answers. Reflecting as a group helps:

- a shared vision of reality,
- develop people's autonomy,
- increase creativity and innovation,

- move people's thinking forward,
- get support behind change,
- facilitate evolution of the internal cultural,
- reduce decision error,
- create a more harmonious social culture and develop solidarity

Collective reflection and collective cohesion

Support for a decision happens during the collective reflection stage and not down the road when it comes to collective action. Besides eliciting support, collective reflection gets people within an organization ***moving in the same direction***, which in turn ensures *cohesive action*.

The same principle holds true in management and communication training: If the training is done collectively, the group progresses at the same pace and in the same direction. If the training is done one-by-one or a few at a time, those who have gone through the training are very likely to meet with resistance by those who have not when they get back to their regular working environment. Eventually they cave under the weight of entrenched habits and give up on what they learned. The training of the few will have achieved nothing, and may even have a negative effect if those who did go through the training get discouraged, frustrated, or even decide to leave.

Convergence versus divergence

During the reflection phase (S2), it is important not to select a majority of people who converge, i.e. who share essentially the same ideas, culture and vision. Just as disagreement is counterproductive in the action phase, agreement is counterproductive in the reflection phase. The point is to facilitate cross-fertilization by including a variety of people you know will disagree with each other in a "reasonable" way.

The goal of CI is not to reach agreement on a decision but to give expression to controversy, debate, and disagreement. If consensus is too strong during reflection, it will snuff creativity. If conflict is too strong, it will paralyze reflection.

Identifying disagreements during the reflection stage makes it possible, depending on the decision adopted, to then form a team responsible for collective action (implementation of the decision). Proceeding in this way diminishes the passive resistance of any sore losers.

Impact of reflection on communication of the decision

People will share a common vision of the substance and meaning of an announced decision if they participated in co-constructing it and will be responsible for its implementation. If they were involved, they will be prone to differing interpretations that can lead to errors in execution, delays, and conflicts between people who understood the decision in different ways.

Without prior, participatory reflection, the communication of a decision will remain very superficial because:

- **meaning** is grasped, not prescribed. It gradually dawns from reflection and cannot be imposed;
- **substance** is inseparable from the meaning people give it. Take the analogy of legal decisions (laws, regulations). Often they are accompanied by background that explains the real effect of the legislation beyond the formal wording. Texts can be interpreted in various ways and even purported to mean the opposite of what the authors intended (part of the art of certain tax attorneys!). If the cooperation phases are skipped, its is very likely that the decision will be interpreted in as many ways as there are people implementing it. Everyone will infuse it with the meaning and substance he or she perceives and finds convenient, not what the decisionmaker intended.

Even if the reasons for a decision are explained, the perceptions of implementers will remain superficial and volatile. Just reading a decision is not enough. For a decision to be implemented intelligently, people need to feel some ownership in it.

Impact of reflection on responsibility

Increasing an organization's level of responsibility increases its overall performance (economic, social and environmental). A distinction must be made between individual responsibility and collective responsibility. If responsibility is defined as collective, everyone puts it off on the group, claims no accountability, and becomes irresponsible. Responsibility necessarily comes down to the individual. Only on this basis is it possible to build *collective individual responsibility*, that is, everyone being individually responsible.

Level of responsibility is directly linked to the level on which reflection was conducted: collective, collegial or individual. The level of responsibility cannot be chosen; it is determined by what choice was made (to engage people in reflection or not).

In the table below, the term "collective or collegial individual responsibility" means that everyone within the collective (or sub-group) feels individually responsible, and "non-responsibility of others" means that those who were not involved in reflection do not feel individually responsible.

Thinking		Responsibility
Collective Intelligence	Generates	Collective individual responsibility
Collegial Intelligence	Generates	Collegial individual responsibility and non-responsibility of others
Individual Intelligence	Generates	Individual responsibility and non-responsibility of others

People feel responsible for a decision, for its success, if they participated in co-constructing it. Even if certain of their ideas were not retained in the end, they indirectly inspired others during the reflecting process. When people are not at all involved in the emergence of a decision, they figure that responsibility rests with those who were and that they themselves are responsible only for performing those tasks they are assigned. They have no stake in the success or failure of the decision, because it will not bring them any recognition, personal pride, or motivation. The decision wasn't theirs. As Julius Caesar said: "Alea jacta est!" (The die has been cast!).

Reflection generates responsibility, provided that it is genuine. A manager may have already made up her mind and use AXIO just to get the buy-in of subordinates, not really to get them to reflect. She will use the reflection phase to tear down any idea or argument liable to jeopardize the decision she has already made. Sooner or later people recognize such bulldozer tactics for what they are. And if they sense that, in the guise of group reflection, they are being **manipulated**, the result will be worse than if the decisionmaker had skipped this step altogether and just announced the decision outright. The manager will lose the trust of her subordinates and discredit not only herself but also the decision, no matter how great it may have been. Even worse than manipulation (is such a thing possible?), however, is collective reflection that results in no decision at all. This is why non-decisions require explanation just as decisions do, if not more so!

Collective reflection is an effective tool for building collective individual responsibility, provided the sense of individual responsibility is already high. Developing cooperation makes people aware that they are responsible for more than the tasks listed in their job description. They must also feel responsible to their organization. Just as the collective intelligence of an organization does not equal the sum of individual intelligences within it, so collective individual responsibility does not equal the sum of responsible individuals.

After ideas have emerged during collective reflection stage, they must be validated through consultation.

C. Consult (S3)

Steps	S1	S2	S3	S4	S5	S6
Players/ Operations	Gather and share information	Reflect	**Consult**	Decide	Capitalize and share information	Act

To consult means to take a survey, to ask people for their opinion. In the AXIO context, the people consulted are those who have a stake in the collective either directly or indirectly, not people inside the entity of reference that defines the collective. These stakeholders may include employees, shareholders, customers, suppliers, consultants, experts, elected officials, unions, NGOs, and others. The choice of stakeholders is an important one, given the significant value they add.

Consulting people who were involved in the reflection stage does not add value. Their vision of reality will be somewhat colored by their own mental representations. It is best at this point to open the process up to other people and solicit reactions from a diverse cross-section of stakeholders. This is how individual, collegial or collective reflection is validated. The point is to get **outside perspectives**.

Benefits of consultation

The benefits of consultation are many:
- Like group reflection, it provides insight from many different angles, in this case according to the multiple criteria of different sectors and cultures.
- It uncovers unconscious irrational behavior, personal agendas, and subtle aspects of the dominant culture.
- It gets outside the framing beliefs, ideology, paradigm, and mental construct that came to define the reflection group over the course of its *ad hoc* existence.
- It can substitute as a kind of collective reflection if this step had to be skipped.

Considering how integral consultation is to sustainable development policy-making, it stands to reason that it is equally integral to sustainable decisions and successful actions as the last control gate before a decision is taken.

The Japanese use the **Ringisho** ("document circulation") method of consultation. This process brings out different points of view primarily for consultative purposes, but combines reflection, consultation and decisionmaking. The basic principle is to consult everyone who has a stake in the objective to be reached, from line staff up to top management, and to get their agreement before moving from intended action to actionable decision.

The extended enterprise

An enterprise becomes *extended* when it enters into close cooperation with its suppliers. Such cooperation enhances performance, because it enables the enterprise to outsource every activity that does not fall within its core business. It also offers prime opportunities for building inter-company intellectual cooperation, because vendors (like all stakeholders) are a prime source of critical information. But inter-company intellectual cooperation doesn't just happen; it has to be organized. Ideally, suppliers should be included in the consultation phase anytime they can bring added value.

D. Decide (S4)

Steps	S1	S2	S3	S4	S5	S6
Players/ Operations	Gather and share information	Reflect	Consult	**Decide**	Capitalize and share information	Act

Decisions can be collective, collegial or solitary. People talk a lot about *collective decisionmaking*, but often they are using the term loosely, indiscriminately referring both to collective reflection and collective decisionmaking. The two must be clearly distinguished. The reflection can be collective and

the decision solitary, because the person in power is the one who chooses how the decision will be made. In a company, the CEO holds the power, some of which he delegates to people lower down (principle of subsidiarity, delegation of power):

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        /\
       /  \
      /    \
  +----------+
  | Top management |
  +----------+
    /        \
   /          \
+--------------+
| Middle management |
+--------------+
  /              \
 /                \
+--------------------+
|    | Employees |    |
+--------------------+
```
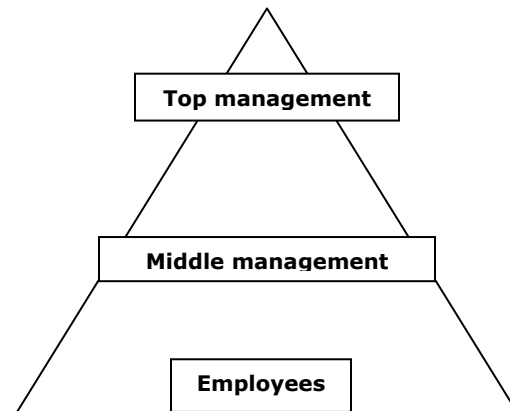
In companies, decisions are thus typically made by one person. Decisions are made collegially or collectively only if that is what the decisionmaker wants. But actually, no decision within a company is either collegial or collective, because everyone holds responsibilities that cannot be shirked under the guise of a collective vote: a decisionmaker always decides alone as far as her superiors are concerned, even if she has organized a collective decision. **The responsibility for a decision does not dissolve into the collective.**

Depending on the operating rules of the organization, a decisionmaker's decision can be subject to validation by superiors or even vetoed by a different management structure. This is particularly true of decisions with financial implications.

In this 4th step of the matrix, the decisionmaker must choose whether he will decide alone, by committee, or involve everyone. This choice depends on how stable one wants the decision to be over time:
- The **more collective** a decision, the more it will be definitive, rigid and stable over time.
- The **less collective** a decision, the more it will be flexible, adaptable and easy to change or scratch.

In a political system, votes on a constitution or major political reform are usually by referendum to protect against rule changes resulting from political squabbles, personal ambitions, or power struggles. But for companies, or any organization subject to competition, deciding collectively generally adds little value for the following reasons:

- **flexibility:** It is harder to criticize—and thus revisit—a collective decision than one taken by a single person. But the survival of a company directly hinges on its ability to **move quickly** (adapt a decision to customer needs, supplier constraints, new products released by competitors), **not its ability to dig in its heels**.
  One could certainly argue that organizational changes every six months would ultimately result in disarray more than anything else. But is the problem the reorganization itself, or the quality of the reorganization and the decision process leading up to it? The issue is not so much how flexible or stable an organization is, but how well it its managed.

- **responsibility:** Those who abstained or voted against the decision are liable to disrupt its implementation (resist change, have sour grapes). Whether consciously or unconsciously, they may want implementation of the decision to fail so they can feel vindicated that they had been right all along. In this regard, a collective decision can be dangerous insofar as it relieves from responsibility those who were against it and even decisionmaker himself, who may try to sidestep his responsibility by hiding behind the group if the decision later fails.

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For these reasons, the advantages of a collective approach are, for companies, undoubtedly more at the reflection stage than at the psychologically-implicating decision stage.

E. Capitalize and share information (S5)

Steps	S1	S2	S3	S4	S5	S6
Players/ Operations	Gather and share information	Reflect	Consult	Decide	**Capitalize and share information**	Act

The KM stage of AXIO, as detailed in Chapter 8(C), is about capitalizing and sharing information that has been constructed and validated during the preceding stages. Placing KM in step 5 keeps it from being dissipated during the action phase. When an action has been completed, people are naturally thinking more about the next action to be undertaken than about KM. It is highly likely that the information created during the first four steps will also be either indefinitely "backburnered" as people attend to other urgent matters or forgotten if the action is a long one.

F. Act (S6)

Steps	S1	S2	S3	S4	S5	S6
Players/ Operations	Gather and share information	Reflect	Consult	Decide	Capitalize and share information	**Act**

Action can be individual, collegial or collective, the purpose being to implement a decision. Collective action can be defined as action that directly or indirectly involves change for everyone. It refers not only to the people charged with implementing the decision, but also to everyone who will be affected by it.

Convergence and divergence

For collective and collegial action, it is best to select implementers who are in agreement with each other, who converge, as opposed to the reflection stage. Convergence means fewer interpersonal conflicts and hence faster action. Discussion has ended; the decision has been made. There is a time for discussing and a time for acting!

Training and evaluation

Upstream from action arises the issue of training: Do skills need to be developed for the action to succeed? Who should be trained?

Downstream from action arise the issues of evaluation and capitalization. Evaluations are generally conducted by one's immediate supervisor for purposes of an annual performance review. The evaluation focuses more on the decisionmaker than on the decision itself, no particular effort being invested in drawing lessons from the decision for the sake of the collective. It is thus up to the decisionmaker to leverage learning for future benefit by explicitly assigning this task to specific people or calling upon the company's internal knowledge managers. Ideally, this decision-evaluation work should be collective and conducted by those who participated in collective reflection so as to improve future intellectual-cooperation performance.

In conclusion, the various steps of the AXIO approach constitute an integral whole. Each gives meaning and adds value to the others. The value contributed by the manager lies in effectively allocating people and time, selecting the level of participation (collective, collegial or individual), and being able to grasp and integrate the contextual environment.

Chapter 5
Information and Collaboration Technologies: Toward E-management

"We build too many walls and not enough bridges." Isaac Newton

Information and collaboration technologies constitute the third pillar of the intelligent enterprise. Typically they are installed on an intranet—a private, internet-type network internal to an organization. Intranets increase organizations' power of communication and collaboration, now making it possible to organize the collective reflection or consultation of 30,000 people, for instance, and to capitalize information arising from that reflection. Intranets are used for three different purposes:

Information = Electronic document management, search engine, file sharing, FAQ, skills mapping, personnel directory, multi-site and multilingual news (with centralized or decentralized updates in lieu of or in addition to a paper newsletter). The user is a *receiver* of information, which is usually top down. The interaction is between a single person and the content.

Communication = Electronic messaging (e-mail), distribution lists, Wiki (content publishing tool), shared calendars, task management, instant messaging (Chat), workflow, e-learning,…. The user is a *receiver* and *sender* of information (top down and bottom up). The interaction is between individuals through content.

Collaboration (collaborative intranet) = Discussion forums, e-coaching (creating content through a questioning process), communities of practice, communication tools when used to create information and not just exchange it, … The user is a *sender*, *receiver* and *agent*, transforming information into new information through interaction with other users. The interaction is among multiple people co-creating content to achieve an objective.

Today's intranets are of course hybrid: Communication intranets generally include the information dimension, and collaborative intranets include the both information and communication functions. Each of these dimensions is important. Collaborative intranets thus offer a combination of all three possible uses—but that does not necessarily mean that all three will be utilized. Intranets are currently used primarily for information, much less for communication, and hardly ever (or never) for collaboration. The reasons for this are not technical, but cultural and organizational—people don't want intranets to rock the status quo, work habits, or management practices too much.

In their everyday reality, the vast majority of users make no distinction among information, communication and collaboration. They use the company's intranet to sent email, and see that as being collaborative. If you ask them to be more collaborative, they will take this to mean that they should send more emails! And they will complain that they can't even get around to reading all of their email as it is. Adding more would be unbearable. People who have this misconception of collaboration are people who have never really seen or used a collaborative intranet ... and/or have perhaps never actually collaborated!

It is very difficult to mobilize collective intelligence under such conditions. Building CI requires robust, appropriate tools like discussion forums, which enable people to reflect together (ask questions and seek answers together). Messaging software is heavily used as a collaborative tool (discussion, task management), even though it is actually a communication tool poorly suited to effectively managing cooperation. Software specifically designed for collaboration reduces email volume and improves information quality.

A. The collaborative intranet: developing a marketplace approach

Advanced collaborative intranets go far beyond communication or information intranets because they impose rules of interaction, and both categorize and evaluate information. They are like a **virtual information and collaboration marketplace** where you configure your own pull and push, i.e. what information you want to grab on your own and what information you want to be provided automatically based on the criteria you have selected through the collaborative intranet. Here is a diagram of how it works:

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                    ┌──────────────┐
                    │  I evaluate  │
                    └──────────────┘

              ╭───────────────────────╮
              │       Information      │
              │           and          │
              │      collaboration     │
              │       marketplace      │
              ╰───────────────────────╯

      ┌──────────────┐        ┌──────────────┐
      │    I take    │        │ I contribute │
      └──────────────┘        └──────────────┘
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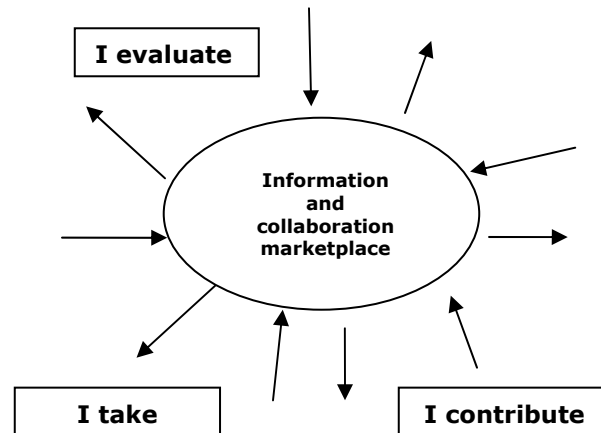
Information is not dumped into your personal mailbox, but held in a public or semi-public (shared) space, a marketplace from which you can request the information you need when you need it.
Messaging serves as a marketplace relay, sending alert messages on activities in progress. Aside from the marketplace and alerts, email is limited to consumable, disposable information. **A good email is one that can be erased once it has been read.** You should soon no longer have to save email (except those you haven't yet had time to read!).

Everyone continuously evaluates information in the marketplace through scoring and feedback. It is structured not by key works or search-engine results, but according to the actual structures, people and operational activities of the organization (e.g. actions, objectives). I decide when I take and when I contribute. **Each person is responsible for publishing his or her own knowledge.** It's almost as if information were being bought and sold. It becomes more valuable the higher the demand—according to its "popularity index."

Intranets currently operate primarily through e-mail (**over-communication**) and library-type document management systems (**sedimentation**). Collaborative intranets (**marketplace approach**) make it possible to structure exchanges, and to regulate, categorize and clean information by eliminating information that is no longer relevant or has become obsolete. While structuring exchanges and information, collaborative intranets preserve informational wealth.

The difference between a marketplace and a library lies in the nature of the information and how fast it circulates. A marketplace is full of living information that continuously transforms to support **collective action**, while a library is full of dead information archived and stored as a **collective memory**. When selecting an intranet, companies need to bear in mind that they are not in the library business! In an operational organization, is there a place for "I'll store it, it may come in handy some day"? If so, what is that place? For what kind of information? For which operations?

B. Capitalizing and sharing information

On average, 60% of the information **useful** to an organization is not capitalized. Of the 40% that *is* capitalized by people within the organization, how much of it is shared? Organizations face two challenges:
- Increase the proportion of useful information that is capitalized.
- Effectively share as much of the capitalized information as possible.

1. Capitalization

The following table derived from the AXIO matrix shows that level of capitalization varies with each stage of the process leading to action:

Capitalization levels	Research/ share information	Reflect	Consult	Decide	Capitalize/shar e information	Act
100%				100%		
90%			90%			
80%		80%				
70%					70%	70%
60%	60%					
50%						
40%						
30%		40% of information already capitalized				
20%						
10%						

This author has observed that clients capitalize about 40% of information. (Capitalized information is information that has been made explicit and given form outside the head of the person holding it.)
At each step in the process, individual interactions increase the amount of capitalized information regarding the objective to be achieved. At the decision stage, nearly 100% of the information will ideally have been capitalized—if every step has been followed and the desire, know-how and means to cooperate exist.

On average, the approximate percentage of information capitalized at each stage is as follows: step 1 generates approximately 20% of information, step 2 generates another 20%, consultation 10%, and the decision itself 10% as the information gathered is analyzed and synthesized. Once the decision has been made, the issue arises of what information to discard and what information to save, the later being information that will be relevant and useful to other actions. It is estimated that approximately 50% of the information can be discarded at the KM phase (step 5).

The problem with capitalizing information arises from the fact that many people perceive it as a waste of time (cf. the "time" argument). Overcoming this obstacle of low motivation requires proactive management, with the decisionmaker allocating both time and human resources to capitalization.

2. Sharing

Unlike monetary or material values, which decrease when shared, "knowledge is the only value that increases when shared." Indian proverb

The capitalization level can be at 100%, but if people do not exchange the information they hold, the level of information sharing can near zero. It is not enough to capitalize information. It has to be shared.

The following table derived from the AXIO matrix estimates the optimum level of information sharing that can be expected in an operational process:

Rate of sharing	Research/share information	Reflect	Consult	Decide	Capitalize/share information	Act
100%						
90%	20% of information not shared					
80%				80%		
70%			70%			
60%		60%				
50%					50%	50%
40%	40%					
30%						
20%						
10%	10% of information spontaneously shared					

Based on the author's observations, the quantity of information **spontaneously** shared within an organization as a matter of course is, on average, 10%: memos, procedures, org charts, directories, instructions, etc. That leaves 90% of information that is not spontaneously shared and won't be unless the sharing is organized through procedures and facilitated by dedicated tools.

For an objective to be achieved, at least 80% of the information capitalized should optimally be shared. The other 20% consists of
-   confidential information,
-   technical information requiring a high degree of expertise to be understood,
-   information not shared that should have been.

The problem with information sharing is both **human** (experienced as a lose of power) and **technical** (it is not enough just to make information available; people have to be able to find it). The human problem can be resolved through managerial action, but the technical problem is more difficult to overcome. How can you find information if it is classified according to some different logic that doesn't make sense to you? Information is generally **classified** by subject and item, but **sought** in connection with an action, person and/or entity. Actions, people and entities offer an objective and shared frame of reference for a collective.

In an organization, nobody looks for information for its own sake, without any purpose. **People search for information in order to accomplish something.** Similarly, information is not capitalized or shared unless doing so furthers some action, objective or project. There has to be an operational connection.

Most of the information contained in today's databases and electronic document management software is classified according to the **subjective logic** of the person or people who created the directory. The classification makes sense only to them. It is very difficult for people wanting to find or store information to figure out someone else's idiosyncratic logic. Information must thus be classified according to an **objective logic** revolving around the organization's past or future actions, projects, or objectives (which are meaningful in connection with an action, which has its own logic). People must also be able to identify the people or entities involved in a particular type of activity. In short, they should be able to search for information based on similarity between the action at hand and actions already carried out or in progress.

An intranet search engine will be effective only if a key-word search can be linked with a type of action, a person, or an entity. Of course, the information has to have been shared according to this logic in the first place, and not by "subject."

In a collective intelligence system, information self-organizes from through everyone's intelligence as a function of actions to be performed. In some cases, a company's whole way of organizing information has to be rethought, **moved from a subjective, individual logic (conservation, sedimentation) to an objective, collective logic (action, organization).**

C. Systems protection and regulation

Everyone within an organization should be able to interact (inform, communicate, collaborate) with everyone else internally and externally (extended enterprise). Any obstacle to such interaction under

the guise of hierarchical protocols, confidentiality or tradition will likely have more negative effects than positive. The purpose of information and collaboration systems is to **enable the most and highest-quality cooperation possible**, that is, between individuals and between individuals and their environment. This requires that systems be open, transparent, and interactive.

In an intelligent enterprise, information **self-regulates**: everyone is responsible for the information he or she contributes and uses. There are no centralized or decentralized information control units, no procedures aimed at regulating communication. Information self-regulation can be likened to empowerment—pushing power as far down the hierarchy as possible to maximize initiative. The principle is the same, but applied to information.

A line staffer, for instance, should be able to send information to anyone in the organization, including the CEO, knowing that a reprimand will be forthcoming if the information was irrelevant and/or sent to the wrong level(s) of management. **Information systems do not have to parallel the hierarchy of the organization.** Employees are well aware of how the organization operates and should understand that the same holds true for the intranet. (Helping those who aren't aware or don't understand is a management issue).

The rules of communication are to be found in common sense and the structure and culture of the organization. Any computerized barriers to the free circulation of information serve no purpose (because they exist already) and are dangerous (because they cannot possibly reproduce the full complexity of communication needs and take into account all of the specific cases never imagined when the systems were programmed). Such barriers are very damaging to collective intelligence and offer no advantages, especially considering that people can always pick up the telephone or walk over and talk with anyone they want. The purpose of a computer system is not to manage people in place of manager, or compensate for their incompetence or failures, but to help them accomplish their management missions.

The temptation is always there to exploit information systems for "big brother," censorship, "morality police" and propagandistic purposes. People do not want that—not in civil society and not at work. The greatest danger facing the intelligent enterprise is information not being capitalized and shared. Yet security arguments that play off people's fears usually win the day. People more readily rally behind someone who warns, "In order to avoid all sorts of dangers, we must not circulate this information" than behind someone who asserts, "We must capitalize and share our data in order to mobilize collective intelligence."

Information must be **protected** to avoid theft or destruction. But information isn't lost when I contribute it or use it! Information duplicates infinitely. "If we each have something we exchange, we will each have something. If we each have an idea we exchange, we will each have two ideas." Chinese proverb.

The important thing is to protect the physical integrity of data storage devices, not to keep information from being duplicated (either intentionally or through theft). Information pirates know that information cannot be stolen. They don't try to take data, they try to destroy it. Protecting data from vandals who couldn't care less about the content must be clearly distinguished from internally regulating it for cultural rather than security reasons.

But some people still resist sharing information on collaborative intranets under the pretext that it is **confidential**. Confidentiality is important, provided that it be approached from a utility angle, not a security angle. The point is to make information available to the people who need it, not to avoid distributing so-called confidential information. Information of no interest to anyone should not be posted in the public marketplace. The person best able to determine who should receive certain information is the person from whom it originates, not that person's supervisor or the Communications Department. People do, of course, sometimes distribute information inappropriately. But better to exercise **after-the-fact controls**, reprimanding people for poor information management than exert **up-front controls** that inhibit collective intelligence.

The performance of an organization should not be measured by the number of locks it has placed on its data but the number and quality of connections it has created among people, and how fast and fluid those connections are (see Newton quote above).

Does your organization have a policy on stealing confidential information from competitors? Would you buy information a hacker had stolen from your competitor? Do you think your competitors would pay hackers to steal your data? The risk of information theft is real. But measures taken to protect against dishonest people should not impair the organization as a whole, slowing intellectual cooperation for the sake of protecting against a potential risk that may never occur. That jeopardizes the long-term success of the company more than opening the door to the unscrupulous.

Only rarely do outside individuals try to spy on a company and steal its information. In 80% of cases, the perpetrators are insiders! Truly confidential (strategic, sensitive) information is so minimal that it should not even be put into information systems, but be specially handled.

All information security systems have one loophole: turnover. An employee who leaves the company to go work for your competitor does more damage than any hacker ever could, because he leaves with a lot of information, some of which is not capitalized and thus lost forever. The best way to protect your information (knowledge, know-how, data) is to create employee loyalty and encourage the capitalization and sharing of knowledge.

D. From functional KM to operational KM

As currently implemented within organizations, KM essentially serves three functions:
- Support for **decisionmaking**, by increasing the quality and quantity of available information,
- **Innovation**, by helping new ideas to emerge then identifying, validating and transforming them into projects,
- Optimization of **production** (recurrent processes), by spreading best practices, reducing errors, and reusing knowledge and know-how.

The above can be described as **functional KM** in that it serves to support the various business operations of an organization. It is a **solution** to an operational problem. Alongside this kind of KM, a new KM function is emerging from collaborative intranets: **operational KM.** In this capacity, KM is used to facilitate and improve the everyday quality and quantity of intellectual cooperation and human connection. It becomes inherent to production and management processes, to the work itself, integrating the three levels of information, communication and collaboration via a collaborative intranet.

Operational KM consists of tracing the substance of interactions between members of a team—not so much operations or best practices but the overarching schema of interactions among people: who acts, when, how, why, on what. In other words, operational KM takes us beyond knowledge itself to knowledge of how humans in action interact (projects, processes), something that could be described as *experience*.

Functional KM has made it possible to know the content of an action, i.e. the sum of information used to carry out a project. Operational KM opens up the possibility of retracing the temporal, contextual, human path taken to complete a project. This represents a major revolution comparable to the move from still photography to cinematography. Static information comes to life, becomes dynamic when seen in the social, relational, and temporal context that existed when it emerged.

It could be said that functional KM capitalizes knowledge and operational KM capitalizes experience in the sense that it retraces an experience (the history of discussions, tasks, lessons learned). KM has thus far been perceived and implemented as a support for the people and entities of an organization. Collaborative intranets can add another dimension to KM and collective intelligence to life. As such, they can impact knowledge, but especially how we manage people and organizations.

E. From e-collaboration to e-management: Emergence of intranets for team management

E-collaboration refers to computer-assisted collaborative workperformed by multiple people in multiple locations. *E-management* is a management mode that integrates information and collaboration technologies: marketplaces, enterprise resource planning (ERP), e-procurement, efficient consumer response (ECR) technologies that manage relations between distributors and suppliers, customer relationship management (CRM), supply chain management (SCM), HR information systems (HRIS), e-business, employee relationship management (ERM), groupware and many other applications. The aspect of e-management of interest here is intellectual cooperation. We will thus leave aside the other aspects of e-management (e.g. production, logistics, finance).

Collaborative intranets are currently deficient when it comes to team management in that they do not help managers handle the complexity of human relations and information flows. These are complex enough in the real world, and quickly become overwhelming when one ventures into a collaborative intranet. The difficulties managers face are not just technical (software ergonomics), cultural (the contact issue), or organizational (resistance to change), but methodological. It's not enough to train people in how to use an intranet, because e-collaboration is not so much about knowing how to use the tool as how to handle all of the interactions among users. Along with a collaborative internet, people clearly need help with the managerial, psychological and sociological aspects of human relationships and the engine fueling them: information.

Moving from e-collaboration to e-management enriches collaborative intranets with processes and methodologies that mobilize collective intelligence and knowledge. One might call this *management-oriented collaboration.* As we have seen, intranets have thus far been used for three purposes: information, communication and collaboration. Here are a few of the functions that a management-oriented collaborative intranet can fulfill:

Management (e-management) = Help facilitate a virtual team, measure the quantity and quality of cooperation, the social climate, help form a team, measure cultural diversity, measure conflictuality (convergence versus divergence), evaluate individual and collective competence and motivation in real time throughout the organization and for each objective that has been defined, team coaching (develop the skills and motivation to work as a team), individual coaching, help manage and conduct annual performance reviews, etc. The user is ***receiver**, **sender**, **agent** and **manager***.

Intranet-based team management tools are available on the market. But there is still great resistance to such tools because they require a change in culture.

Change the culture?

A culture always changes any time a new tool (software or other) is deployed. Many tools down through history (e.g. the train, the airplane, the telephone, the internet) have changed our perspective, our reality, how we relate to the world. These tools have changed our behavior, and hence our values. Intranets will, *de facto*, change a company's reality—its culture, interpersonal relations, decisionmaking processes, and as a whole. Some people blame tools for changing their culture, as indeed they do. The question people need to ask themselves is: Are we ready for a culture change?

Information and collaboration technologies are gradually shifting us to a **culture** of written (and hence explicit), horizontal and virtual interactions, where as today's dominant culture is one of oral, implicit, vertical (hierarchical) and face-to-face interactions—albeit more so in Latin than Anglo-Saxon cultures.

In the next 10 years, the highest performing companies will be those with a culture that naturally enables them to seamlessly combine collaboration and e-collaboration, management and e-management. Oral, implicit, vertical and face-to-face interactions will ***still exist***, but written, explicit, horizontal, and virtual interactions will become increasingly prominent. Performance will depend on the ability to get the right mix, one that makes it possible to manage intellectual capital and increase the quantity and quality of intellectual cooperation, both face to face and remotely.

Word processing and electronic messaging software (e.g. Outlook) moves in the direction of such a culture. E-collaboration is just the next step. This evolution seems inevitable and will very likely accelerate. The sustainable development of a company will depend on its ability to adopt a **technology-friendly culture, which means written, explicit, horizontal interaction through software.** But that culture must also, of course, be a **culture of collaboration** rooted in the values of sharing, respect and responsibility (as detailed in the following chapter).

The central cultural challenge, then, for organizations is to develop the desire for cooperation along with openness to information and collaboration technologies.

Chapter 6
Want to Cooperate: Understanding How Values Impact Cooperation

| Step 1
Want to cooperate | Step2
Know how to cooperate | Step 3
Have means to cooperate |
| --- | --- | --- |
| **Establish a collaborative contract that fosters a culture of collective intelligence** | Train people in collective-intelligence management techniques for implementing that culture, | Employ software, hardware & networks to perpetuate that culture |

"When you are sure you are right, there's no need for discussion with those who are wrong." Wolinski

This humorous quote by Wolinski highlights the importance and difficulty of fostering a desire to cooperate, which has to do with culture and values.

Wanting to cooperate means being motivated to engage with others, sharing with them some of one's own power and knowledge.

A **value** is physical and psychological **inner force** expressed in daily **behavior**. A set of values constitutes a **culture**, which materializes through a set of behaviors. Values underpin our emotions, beliefs, ideas and decisionmaking.
Cultural problems emerge within an organization when its members hold discordant values. That generates conflict. The more a conflict is not so much over ideas as over deeply held values, the more violent it will be, especially insofar as the values remain unconscious. This explains how there can be such a disconnect between what people say and what they do. While we may chalk such dissonance up to a lack of integrity or honesty, it actually betrays an unconscious incongruity.

Collective intelligence requires **personal commitment**, a genuine desire to cooperate. But such motivation cannot be summoned through sanctions and rewards, which yield only a very temporary, externally motivated desire. Sanctions and rewards are useful for creating coherence within an organization and satisfying the need for recognition, but first there needs to be a personal commitment to cooperative behavior on everyone's part. That personal commitment can take the form of signing the organization's **collaborative contract** and thus adopting a corresponding **ethic of collaboration**.

Having people **change their behavior** also means they have to change their value system in order for there to be consistency between what they think (values) and what they do (behavior). Moreover, people will change their behavior only if they feel they are doing so of their own accord and others are doing it too. This is because of our need for a sense of belonging (if you behave differently, you risk being excluded from the group) and for security (if you behave differently, you are wrong). This makes it difficult—but not impossible—to change a behavior. Described below are two possible approaches to encouraging a change in culture, one cognitive (at the collective level), and the other behavioral (at the individual level).

The collective-level cognitive approach (know-how, behavior, culture)

-   **Step 1, Know-how:** Provide access to knowledge and raise awareness so people "get" it. This might involve presenting the concepts of intellectual cooperation, raising awareness of the advantages of collective intelligence, and establishing a collaborative contract that lists acceptable behaviors and how everyone can benefit.

- **Step 2, Behavior:** Appropriation of this knowledge translates into new practices, behavioral changes. Based on new information, people decide to change their reality to bring it into line with what they now know (reduce cognitive dissonance).
- **Step 3, Culture:** This behavioral change shifts people's mentality, their paradigm, and ultimately their values, their culture. The behaviors become institutionalized as if they had always existed.

The individual-level behavioral approach (behavior, know-how, culture)

- **Step 1, Behavior:** Describe the target behaviors (behaviors in line with the organization's strategy), provide the technical skills needed to implement those behaviors (through a training and coaching plan), create an organizational and operating environment conducive to adoption of the new behaviors (structures, rules, compensation policy, evaluation system for measuring progress with 360° feed-back, for example).

- **Step 2, Know-how:** Let people experiment with the new behaviors to deepen their knowledge, discover the effect of those behaviors, and can weigh their pros and cons.

- **Step 3, Culture:** If the gains outweigh the losses, the behavioral change will be lasting, resulting in the emergence of a new culture.

Ideally, the two approaches should be combined. Cooperation is best encouraged by starting with information (so people "get" it) or training (behavior) rather than coercion, which is bound to fail. And the behavioral change must be collective (collaborative contract), because people cannot be expected to adopt cooperative behaviors all on their own (or practically), in an organization where no one cooperates. The strategy is to create a dynamic of collective cooperation right from the outset and to show people how they will benefit from cooperating.

A. The cultural and psychological foundations of collective intelligence and KM

1. What are the values of CI and KM?

Collective intelligence is based primarily on three values. The basic value is **sharing**: sharing information, power, my knowledge, my experience, my skills. Next comes the value of **responsibility**: responsibility for decisions, for one's actions (feeling responsible for achieving one's objectives and also for the sustainable development of the company). And finally, the value of **respect**: respect for the ideas and values of others, respect for human beings, with all of their strengths and weaknesses (which connects with the value of tolerance). These are key values, among others.

In a collaborative-space discussion, Grégory Poussier explains what he sees as the limits of these values:

> - Sharing: Only if I am sure that everyone is going to play the game. Otherwise, the information I give will be rather oblique = a lure. Only if no one steals my ideas and takes credit for them = free-rider principle. To share, you have to be able to trust the other members of the community.
> - Responsibility: OK, but the only information I will share is information that is inarguable. Otherwise it's too risky = Fear of judgment. I'm willing to give information, but I want to know how it is going to be interpreted, who is going to use it, whether it will be taken out of context = how will it be reused? To whom will it be passed on? It is essential that I know whom I am dealing with (identities are known), and in what role.
> - Respect: First of all, this means respecting oneself. It also means being able to handle being contradicted without taking it as a personal attack = fear of what others think.

Poussier's comments highlight the need for an ethic of collaboration, a new social contract that helps build trusting cooperation and leads to a consensus on acceptable and unacceptable behaviors so everyone can fully and comfortably live out the values of collective intelligence.

2. What are the beliefs?

Belief No. 1: We can add value at particular times in particular situations to reach a particular objective (**situational intelligence**).
The opposite of this belief is: People are often idiots and sometimes intelligent. This means believing that people aren't really capable and that their deficiencies hobble your ability to get work done.

Belief No. 2: Every one of us can improve, develop. We all possess **potential**. Everyone's potential and intelligence need to be valued and developed.
The opposite of this belief is: People can't improve. But managers must go beyond identifying incompetence. They must develop the competence and motivation of their staff in order to increase their potential.

Belief No. 3: We each defend our own interests but are able to care about the common interest and **sacrifice** some of our own to protect the sustainable development of the organization.
The opposite of this belief is: People are selfish. It's human nature to always defend one's own interests without regard for others.
There is, of course, an element of selfishness in each of us, but also an element of altruism. A manager, an organization has to know how to tap into that.

The collective intelligence of an organization cannot be mobilized if these values and beliefs do not exist, or if the executive team is not committed to fostering behaviors consistent with them. If you want to change values, you have to change behaviors, and behavioral change should not be negotiable, because that is what enables an organization to progress.

Behavioral change = an adaptable organization = a lasting organization

In days gone by, people were born and died under the same paradigm. Today, we are born into one and die in another. Our difficulties stem from not having learned how to shift our paradigms, values, and behaviors. Many people struggle and feel ill at ease simply because they feel unable to adapt.

B. Intercultural cooperation

Cultural differences exist between people, teams, companies, and so on. Cultural differences related, for example, to seniority or age (a cultural generation gap) exist even within a single company or entity. In fact, **cooperation is always intercultural**. What varies is the proportion of values that are identical or different. French people from a particular region, for instance, will share more identical values than will people in France and people in China.

Pascal Baudry, president of WDHB Consulting and an expert in cross-cultural issues, describes the differences between the French and Americans on the notion of information sharing:

> The role of the explicit in American culture corresponds to the protestant idea that the group—and hence individuals—stand to gain more than they lose by publicly sharing as much information as possible. In contrast, the French guard against what they regard as excessive and potentially dangerous dissemination of personal information, for example by passing a data privacy law. Americans see what they might gain by **sharing**; the French see what they might lose. (*Français & Américains : l'autre rive*, p. 37, Editions Village Mondial 2003)

Collective intelligence cannot be mobilized without information being shared. If a French and American person work together, they will probably have different approaches to information sharing and will thus likely have difficulty cooperating, that cooperation being intercultural.

C. Mapping collective-intelligence and KM values

Human relations are rooted in **values**. The more those values are **explicit**, the more successful relations are. Yet 90% of values are **unconscious**. This explains why it is important to map them using matrices and questionnaires, particularly when it comes to cooperation-related values. When we regularly engage in a particular behavior, it means that some force inside us is prompting us to, and hence that it is a strong value for us. Values mapping helps identify the **dominant culture** of a person or group.

The following matrix includes 27 values divided into three columns. It has been derived directly from Maslow's Hierarchy of Needs, the 125 universal values identified by Brian Hall, and the insights of Paul Ray on Cultural Creatives. (Bibliographic references available at www.culturalcreatives.org). Each column describes a stage in the evolution of values from survival to harmony between the individual and his or her environment.

Column 1 corresponds to **foundational values**. These structuring values are strong when we are young. They serve as a foundation for a natural cultural evolution toward **developmental values** (column 2), which gradually gain importance during adulthood (30-50 years old) and then increasingly give way to **values of harmony** (column 3).

	Foundation	**Development**	**Harmony**
Collective	Law / Order Territory / History Play / Recreation	Equity / Justice Education / Knowledge Science / Technology	Harmony / Peace Otherness / Diversity Cooperation / Synergy
Collegial	Family Loyalty / Fidelity Tradition	Community Performance Solidarity	Brotherhood Respect / Tolerance Listening / Empathy
Individual	Ownership Security Honor	Independence / Freedom Work Competition / Risk	Responsibility / Ethics Ideas / Innovation Spirituality
	(Traditional – Past) Authoritarian management Static values	(Modern - Present) Management by objectives Dynamic values	(Creative - Future) Management by vision Systemic values

Note: Individual and group cultural diagnostic questionnaires using this matrix are available (contact the author).

Every day we exhibit behaviors related to these 27 values—they **all** exist inside each of us. But certain values take on greater or lesser importance over the course of our lives.

- The values in **column 1** require conformity. They favor obedience and power, i.e. unequal relationships. Cooperation is not effective because it is done in the interest of the person in power, which makes it artificial and limited to the moment.
- The values in **column 2** prompt exchange and communication, but not true cooperation. The framework remains vertical and unequal.
- The values of **column 3** compel us to express ourselves and take initiatives. These values facilitate co-construction, meaning building, and hence cooperation.

This matrix distinguishes **three types of cultures**:

- **Traditional** (column 1), representing 25% of the population—negative leaders opposed to any change whatsoever.
- **Modern** (column 2), representing 50% of the population—change followers.
- **Creative** (column 3), representing 25% of the population—positive leaders who welcome change (their numbers have significantly increased over the past 15 years)
-

(These percentages have been drawn from the Paul Ray's study on Cultural Creatives, www.culturalcreatives.org/straightfacts.html)

The most primitive values (column 1) are those of power and dominance based on a negative energy, namely **fear** (the number one driver in human beings). In a team, traditionals will often prevail over moderns and creatives because they know how to play on fear to win the upper hand. Say you are told: "You will go bankrupt if you don't shut down this unit." You will be more apt to follow that advice than if you are told: "It is worth shutting this unit down in order to save the environment" (the more sophisticated values of column 3).

Further complicating matters is the fact that a single person can hold different values depending on the context—personal (family, friends), social (civics, associations) or work. Values associated with these three spheres may converge or diverge. Someone might be very humanistic toward his children, but a ruthless manager toward his subordinates.

Just as industry is driven by energy, the information society, the society of intelligence, is driven by values. We operate according to a value matrix that has gradually developed since our childhood as a function of our experiences and interactions with the world and people around us (family, friends and colleagues). Our values are what prompt us to invest our time and physical and moral energy into certain behaviors more than others. The challenge facing organizations and individuals is to understand their own culture, identify how that culture does and doesn't serve their long-term future, and be able to shift their values to bring them into line with their objectives. If an organization wants to develop a culture of cooperation, it has to understand its existing culture and establish a framework favorable to that cultural evolution.

The leader of an organization must define the level of intellectual cooperation desired (from 0% to 100%) and the corresponding target values and employee behaviors needed to get there. A collaborative contract can be more or less specific, more or less restrictive compared to the existing culture depending on the quantity and quality of intellectual cooperation the leader desires.

The development of collective intelligence requires **cultural intelligence**, which could be defined as awareness of one's values and the ability to shift them toward harmony (between people and between people and their environment). People have to want to cooperate but, as discussed in the next chapter, they also need to know *how* to cooperate.

Chapter 7
Know How to Cooperate: Being Cooperative and Getting Cooperation

Step 1 Want to cooperate	Step 2 Know how to cooperate	Step 3 Have means to cooperate
Establish a collaborative contract that fosters a culture of collective intelligence	Train people in collective-intelligence management techniques for implementing that culture	Employ software, hardware & networks to perpetuate that culture

Cooperation cannot be improvised. It requires certain human qualities, a grasp of notions in psychology and interpersonal skills. Mastering these elements enables one to develop **relational intelligence**. The intelligent enterprise must develop this key competence of knowing how to cooperate.

Knowing how to cooperate means understanding another's psychology and having the relational skills to build and maintain a quality human relationship.

There are two dimensions to cooperation know-how:
- Individual dimension:
Knowing how to be "cooperative," which has to do with one's personality, intra-personal intelligence (self-understanding) and interpersonal intelligence (e.g. ability to understand others, be empathic, effectively communicate and criticize). (See Howard Gardner.)
- Collective dimension:
Knowing how to get others to cooperate, which has to do with a manager's ability to guide a team. A manager must know how to create, develop and sustain intellectual cooperation among his or her staff.

The individual dimension implies good self-understanding and is a prerequisite to developing the collective dimension. Progress on the individual level and be achieved through any number of readily available personal-development and interpersonal-skills trainings. At the collective level, things get more complicated and will thus be discussed in this chapter, which builds on the collective intelligence management techniques described in chapters 2, 3 and 4. Here we will look at what it means to be a manager of collective intelligence and what skills such a manager must possess.

A. Diagnosing different management approaches using AXIO

AXIO can be used to analyze and understand a manager's approach to managing. It provides a framework for observing practices and identifying strengths and weaknesses. (See questionnaire in Appendix 1.)

Diagnostic results generally show a manager to have a dominant management style. Whether the action be collective, collegial or individual, a manager will act more or less in the same way out of habit, for lack of other means, or because of his or her values.

The following three grids illustrate different dominant approaches to management:

- Predominantly individual management:

The manager has difficulty acting at the collegial and collective levels:

Steps	S1	S2	S3	S4	S5	S6
Players/ Operations	**Gather and share information**	**Reflect**	**Consult**	**Decide**	**Capitalize and share information**	**Act**
Collective (Everyone)	Collective research	Collective intelligence	Consult all stakeholders	Collective decision	Collective Knowledge Management	Collective action
Collegial (sub-group)	Collegial research	Collegial intelligence	Consult some stakeholders	Collegial decision	Collegial Knowledge Management	Collegial action
Individual (one person)	Solitary research	Individual intelligence	One person	Solitary decision	Individual Knowledge Management	Solitary action

- Predominantly collegial management:

The manager has difficulty acting at the collective level but, having integrated the collegial dimension, will have an easier time moving in this direction:

Steps	S1	S2	S3	S4	S5	S6
Players/ Operations	**Gather and share information**	**Reflect**	**Consult**	**Decide**	**Capitalize and share information**	**Act**
Collective (Everyone)	Collective research	Collective intelligence	Consult all stakeholders	Collective decision	Collective Knowledge Management	Collective action
Collegial (sub-group)	Collegial research	Collegial intelligence	Consult some stakeholders	Collegial decision	Collegial Knowledge Management	Collegial action
Individual (one person)	Solitary research	Individual intelligence	One person	Solitary decision	Individual Knowledge Management	Solitary action

- Collective intelligence management:

Knowing how to manage collective intelligence means being able to act on all three levels at every stage depending on the objective to be achieved, the resources available, and the context:

Steps	S1	S2	S3	S4	S5	S6
Players/ Operations	**Gather and share information**	**Reflect**	**Consult**	**Decide**	**Capitalize and share information**	**Act**
Collective (Everyone)	Collective research	Collective intelligence	Consult all stakeholders	Collective decision	Collective Knowledge Management	Collective action
Collegial (sub-group)	Collegial research	Collegial intelligence	Consult some stakeholders	Collegial decision	Collegial Knowledge Management	Collegial action
Individual (one person)	Solitary research	Individual intelligence	One person	Solitary decision	Individual Knowledge Management	Solitary action

The collective, collegial and individual dimensions are all essential to managing collective intelligence. This mode of management is particularly useful for managing project teams, which are often cross-functional and do not lend themselves to a classic authoritarian approach.

B. Knowing how to manage collective intelligence

The AXIO matrix provides a guide to developing a collective-intelligence approach to management. Such management requires that the decisionmaker **trace a path through a three-level process**. Each objective to be achieved calls for a different path according to the people available, the urgency and importance of the objective, the context, the culture of the people involved, and the technologies available within the organization. The intelligence of those who use the matrix is thus key to its effectiveness!

The matrix can be used **linearly**: Start with S1 and continue through to S6, shifting to the collective, collegial or individual level as appropriate. For more weighty or complex actions, the matrix can also be used in an **iterative** fashion. For instance, you might first work at the individual level for steps 1 and 2, then repeat those steps at the collegial and finally the collective level before proceeding to steps 3, 4, 5, and 6. Such iterations can also help restate the initial objective on the fly (i.e. better identify the problem).

The AXIO matrix visually highlights the fact that undertaking collective action without collective reflection can potentially result in resistance to change, zero ability to react to an unexpected turn of events, interpersonal conflicts, frustrations, loss of meaning, irresponsibility, feigned, slow or delayed implementation, frequent or continual revisions, and other undesirable effects.

Mobilizing **collective action** around implementation of a decision that was based on **individual reflection** can degrade into what might humorously be dubbed **M.I.G.: Management by Incantation and Gesticulation**. This kind of management demands enormous time and energy—both physical and mental—on the part of managers. Lucky ones can call in consultants. But even consultants are liable to address only the ostensible problem and not its roots so as not to jeopardize their own future business by confronting the client with the real issue, which often turns out to be an absence of collective reflection or consultation when dealing with a necessarily collective action.

Some managers perceive collective reflection as a waste of time, failing to see its many benefits as a management approach: It provides recognition, gives people a sense of belonging, motivates them, develops their potential, elicits creativity, triggers innovation, mitigates conflicts, reduces turnover, increases people's sense of responsibility, yields higher productivity, and more. As the collective comes to stand on its own, the manager can become an "emerger," even a visionary, who provides impulses that people rally around.

For a decision requiring only **individual action**, however, undertaking the information phases at the higher collegial or collective levels does not significantly increase the chances the action will succeed, only the quality of the decision. So a cost/benefit analysis is required: Is it worth involving significant human resources in the decision? In short, taking a high-level (collective or collegial) path for an individual action will likely yield **unnecessarily high quality**, whereas taking a low-level (individual or collegial) path for a collective action will likely yield **inadequate quality**.

A decisionmaker must thus choose the particular matrix path that will yield the optimum cost/effectiveness ratio. Here are a few sample paths:

Ideal path for solving a problem
Problems can be solved mainly through collective and collegial work. The choice of path depends on the seriousness and complexity of the problem.

Steps	S1	S2	S3	S4	S5	S6
Players/ Operations	Gather and share information	Reflect	Consult	Decide	Capitalize and share information	Act
Collective (Everyone)	Collective research	Collective intelligence	Consult all stakeholders	Collective decision	Collective Knowledge Management	Collective action
Collegial (sub-group)	Collegial research	Collegial intelligence	Consult some stakeholders	Collegial decision	Collegial Knowledge Management	Collegial action
Individual (one person)	Solitary research	Individual intelligence	One person	Solitary decision	Individual Knowledge Management	Solitary action

Ideal path for conducting a study
Here, the objective is to produce a study, which will then be used for some other objective or change. In this case, the action can be collegial, handled by a single work group from beginning to end.

Steps	S1	S2	S3	S4	S5	S6
Players/ Operations	**Gather and share information**	**Reflect**	**Consult**	**Decide**	**Capitalize and share information**	**Act**
Collective (Everyone)	Collective research	Collective intelligence	Consult all stakeholders	Collective decision	Collective Knowledge Management	Collective action
Collegial (sub-group)	Collegial research	Collegial intelligence	Consult some stakeholders	Collegial decision	Collegial Knowledge Management	Collegial action
Individual (one person)	Solitary research	Individual intelligence	One person	Solitary decision	Individual Knowledge Management	Solitary action

Ideal path for reorganizing an entity
If the reorganization will affect the entire entity, the collective dimension becomes vital.

Steps	S1	S2	S3	S4	S5	S6
Players/ Operations	**Gather and share information**	**Reflect**	**Consult**	**Decide**	**Capitalize and share information**	**Act**
Collective (Everyone)	Collective research	Collective intelligence	Consult all stakeholders	Collective decision	Collective Knowledge Management	Collective action
Collegial (sub-group)	Collegial research	Collegial intelligence	Consult some stakeholders	Collegial decision	Collegial Knowledge Management	Collegial action
Individual (one person)	Solitary research	Individual intelligence	One person	Solitary decision	Individual Knowledge Management	Solitary action

Ideal path for defining an overall company strategy
Here, it is a matter of *defining* a strategy, not implementing it. The preparatory work may hence be long so as to correctly frame the issue and avoid deploying a misaligned strategy that pointlessly mobilizes the entire company. The decision can be made alone or collegially (in executive committee).

Steps	S1	S2	S3	S4	S5	S6
Players/ Operations	**Gather and share information**	**Reflect**	**Consult**	**Decide**	**Capitalize and share information**	**Act**
Collective (Everyone)	Collective research	Collective intelligence	Consult all stakeholders	Collective decision	Collective Knowledge Management	Collective action
Collegial (sub-group)	Collegial research	Collegial intelligence	Consult some stakeholders	Collegial decision	Collegial Knowledge Management	Collegial action
Individual (one person)	Solitary research	Individual intelligence	One person	Solitary decision	Individual Knowledge Management	Solitary action

The work of steps 1 through 3 is done in stages, beginning at the individual level and ending at the collective level.

Knowing how to manage collective intelligence is a skill that impacts a team in several regards:

- **responsibility**: People will take greater responsibility for implementing a decision if they have been involved in the reflection or consultation leading up to it.
- **aptness:** The more closely the steps of the matrix have been followed and the more collective intelligence has been mobilized, the more apt a decision will be.
- **motivation:** Without collective reflection or consultation, motivation to implement the decision will be low.

These are, of course, just predictions, which are difficult to make—especially about the future!

C. Getting people to cooperate

Getting people to cooperate requires managing not only collective intelligence but a team.
It's back to basics!
Since this book is not about how to manage a team, however, we will focus on just one sample skill particularly useful in step 2 of the AXIO matrix: **Organizing a reflection meeting***.

The word *reflection* is important. We are talking about a meeting specially organized for reflection—not information gathering, not decisionmaking, not consultation. Meetings should not be a catch-all. A reflection meeting is limited in terms of the number of people who can be involved. Beyond 20 people, coordination and reflection-sharing become practically impossible and require the use of software. Collective reflection cannot consist of a sum of unconnected reflection meetings on the same issues, because the responses will not be shared. **The important aspect of collective reflection is the opportunity for everyone to discuss anyone's ideas**. Each one of brings a unique perspective according to our hierarchical position, department, expertise, experience, seniority, and so on.

Collective reflection will yield results only if the responses of different groups are hashed out in successively wider circles. Each round will help formulate new responses based on the previous aggregation until the process ripples out to include everyone. If using software would be difficult, a representative panel of the population of the organization can be selected for participation. The danger is that panel members will evolve while others don't, resulting in the former finding themselves out on their own when it comes time for action.

Getting a team to cooperate is something that happens face to face, but a management-oriented collaborative intranet can be very useful.

Getting a team to cooperate through a collaborative intranet

Here again we will limit ourselves to a few sample skills required to manage a team through a collaborative intranet: facilitating a discussion forum; publishing newsletters that keep people informed; managing the interactions of multiple remote staff; effectively communicating by e-mail; remotely managing tasks across multiple projects and multiple teams; remotely managing needs for belonging and recognition; balancing one's personal and professional life when telecommuting, etc. E-collaboration management trainings are currently being developed. A discussion-forum facilitation guide proposed by Laval University in Quebec, for instance, can be found at http://www.tact.fse.ulaval.ca/fr/html/outils/animation_forum/index.htm

Going a bit further on the skill of facilitating a virtual meeting, here are some of the conditions required for success (which make it clear why the discussion forums facilitated by certain managers lead nowhere):

- Participants will not be motivated unless they are certain that their contributions, opinions and ideas will be considered and contribute to the **emergence of a decision** or action. Otherwise, participating in a collaborative intranet will be considered a waste of time.
- Participation must be **mandatory**. Participation will be very low or even non-existent if it is perceived as optional.
- Discussion on any given objective must be **time limited**. (It is important to set a deadline for participating.) The optimum duration of a virtual discussion is **25 days**. Much less, and the full richness of the discussion may not have a chance to emerge. Much more, and it may stall. This duration must, of course, be adjusted depending on the constraints and context in question.
- It is also very important that the manager post at least one contribution (even if very brief) on each of the questions he or she asks. This stimulates participation from the outset and avoids the **blank-page syndrome**.
- A virtual work group requires as much management as a face-to-face work group: **software does not do the managing, it only helps the manager.**
- The **rules of communication** must be the same in a virtual discussion as they are in a face-to-face discussion. What would be unacceptable in a meeting should not be tolerated on a discussion forum.

These conditions are essential to sustaining people's motivation and getting results. They are among the skills that a manager must acquire. Note that the conditions for success are exactly the same as for a face-to-face meeting. Working together remotely and asynchronously requires just as much management action as working face-to-face. No software, matrix or method exists that can manage a team in place of a manager, and never will. It is a pipedream to believe that computer technology will some day compensate for managerial incompetence.

Moreover, software motivates no one. Only a manager can motivate a team. The only thing that can be required of software is that it not *demotivate* people participating in a work group. But managing a team through groupware presents a challenge for most managers whose computer skills are often limited to messaging and office software.

Cooperative learning is also on the rise. Cooperative learning means using cooperation to develop one's technical skills, one's potential. Communities of practice are being established within companies to enable people to come together in a non-hierarchical context and exchange knowledge, advice, experience and best practices.

At the university level, the virtual campus of the University of Limoges (http://www-tic.unilim.fr) offers a DESS graduate degree in "Virtual communities and managing collective intelligence via digital networks." The learning is entirely based on a pedagogy of collaborative work among the students, most of whom are scattered across several continents.

This overview has touched on the ways in which people must change the way they manage. They must learn to manage collective intelligence by integrating the individual, collegial and collective levels, know how to manage a team, and become skilled at doing so with the right mix of face-to-face management and management through a collaborative intranet. For those who want to know more about managing a team, Appendix 2 contains a description of team performance characteristics and a series of diagnostic questionnaires.

But to be effective, knowing how to cooperate must also be supported by the means to cooperate.

Chapter 8
Have the Means to Cooperate: From Dream to Reality Without Nightmares!

Step 1 Want to cooperate	Step 2 Know how to cooperate	Step 3 Have means to cooperate
Establish a collaborative contract that fosters a culture of collective intelligence	Train people in collective-intelligence management techniques for implementing that culture	Employ software, hardware & networks to perpetuate that culture

"On peut toujours plus que ce que l'on croit pouvoir" Joseph Kessel
(You can always do more than you think you can.)

Wanting to cooperate and knowing how are but the first steps toward creating collective intelligence. As Lévy explains, you also need the *means* to cooperate through structures and practices conducive to intellectual cooperation:

> I would posit that forms of social organization in which individuals are freer—and thus better able to realize their potential—and which provide more effective procedures and tools for intellectual cooperation constitute a "competitive advantage" over companies in which people are oppressed (or their uniqueness stifled) and intellectual cooperation discouraged or little supported by tools. In other words, the direction and outcome of today's cultural evolution is enhanced collective intelligence (predicated on freedom). This is precisely why regimes favoring intellectual and political freedom will ultimately prevail over dictatorships that repress thought. […] It is no fluke of history that divine-right monarchies, Nazism, Stalinist totalitarianism and other forms of dictatorship have fallen to democracies. Ultimate power lies in freedom, not in oppression. (*Cyberdémocratie*, Pierre Lévy, pp. 16-17, Editions Odile Jacob, 2002)

To develop intellectual cooperation, the intelligent enterprise must thus adjust its strategy, organization, information systems, management approach and culture.

Being able to cooperate means evolving within an environment that fosters cooperation among people and among entities.

The means to cooperate include a company's operations (A), organization (B) and knowledge management (C). We already discussed the technological dimension in chapter 5. Here we will explore others.

A. Intelligent organization: balancing order and chaos

An intelligent organization is defined by its strategy. If an organization is clearly focused on its objective, there will be no need for plans and a centralized control system. The organization will be able to move forward through ongoing interaction among its members who, by trial and error, will find the optimum organization for their environment and be able to adjust it over time as the environment changes.

An intelligent enterprise cannot lose its meaning because it continually recreates itself through intellectual cooperation. Meaning guides the organization, the organization does not dictate meaning. This organizational model has been described by Dee Hock, founder and CEO Emeritus of VISA

International, who calls it the *chaordic organization*, a contraction between *chaos* and *order*. (See www.chaordic.org for more information). This kind of organization coincides reflects what Paul Valéry said: "Two dangers constantly threaten the world: order and disorder."

An intelligent organization is characterized by:
- having as few hierarchical levels as possible.
- being organized as a network, a web, a constellation.
- relations based on *horizontal or bottom-up cooperation*. Top-down cooperation is more about hierarchy than it is about cooperation.

A distributed organization juxtaposes a *central body* that maintains overall order and coherence and **autonomous entities** directly interconnected by **open, horizontal information and collaboration systems**. This goes far beyond a matrix organization in which the horizontalness is primarily organizational, not informational.

The autonomous entities may fit into a hierarchical structure (business unit→ divisions→ departments→ plants, etc.). What matters is that they cooperate and communicate directly among themselves without having to go through a central control body. Furthermore, the cooperation/communication is not just among the heads of the subordinate entities, but everyone within them. Any member of an entity can interact with any member of another entity without first having to get the go-ahead from his supervisor (regardless of position within the hierarchy of the entity).

A distributed organization closely resembles the organizational structure of the internet, where servers (which can be likened to entities) direct interconnect without going through a central server. There does, however, exist a central body that, for example, defines communication protocols (IP addresses) and address formats (domain names). It could be said that this body facilitates relations among the servers in terms of form, without dictating content.

The evolution toward distributed organizations seems inevitable once everyone has access to collaboration systems enabling horizontal, cross-cutting interactions. Organizations that remain too hierarchical could soon crumble under pressure from these systems. This trend began with the telephone, the fax, and now exploded with the internet. The internet and intranet make it possible to function and be effective collectively without any central coordination among individuals. Hubs of coordination appear and disappear as successive adjustments are made in response to a changing environment. Companies wanting to enhance their collective intelligence must therefore make it a priority to establish a collaborative intranet. We're not talking here about an intranet for information or communication, but one that enables true cooperation.
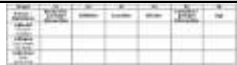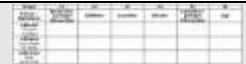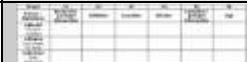
A collaborative intranet enables information to circulate through **individual horizontal interaction** rather than according to some **centrally coordinated, top-down communication campaign**. Over time, information finds its way to the appropriate individuals at the appropriate levels. Besides, individuals need not have the same level of information at the same time to produce collective intelligence. What matters is that information be shared. If it is information *can* reach someone in the organization who needs it, without that person having requested it. What a revolution compared to the company newsletter (orchestrated top-down communication), which broadcasts information potentially useful to some or all of its recipients.

Bear in mind that no ideal organization exists in the absolute, only for a particular culture, a particular environment and a particular context. An organizational structure, therefore, will always be relative and situational.

B. Running an intelligent organization: the AXIO 2 matrix

Very schematically, a company consists of four elements: a **strategy** (which provides vision, direction), an **organization** (which structures power, relations), **systems** (e.g. information, management, control, which enable the organization to function), and **operations** (all objectives, activities, tasks).

Based on these four elements, we can build a matrix we will call **AXIO 2** that shows how an intelligent organization functions. To construct this matrix, we will use the three levels of the original AXIO matrix. Here, the individual level corresponds to top management, the collegial level to middle management, or in some cases a project group (comprised of a few people from top management, middle management and the collective), and the collective level to all members of a company, including executives and mid-level managers. Here is the AXIO 2 matrix

Players/ Elements	Strategy	Organization	Systems	Operations
Collective				[AXIO matrix]
Middle management		[AXIO matrix]	[AXIO matrix]	
Top management	[AXIO matrix]			

The original AXIO matrix is inserted into each column of the AXIO 2 matrix, because it is assumed that action on strategy, organization and so on will be driven by AXIO steps 1-6. Within each column, placement of the AXIO matrix depends on the core function of each level of management. Top management is primarily responsible for strategy, while middle management is mainly responsible for organization and systems, and first line managers and staff for operations. Thus, in the **Strategy** column, the AXIO matrix appears in the **Top management** line, because strategy constitutes the core function of top management. The main job of a first line manager is not to define the company's strategy, and the main task of a CEO is not to manage a project team.
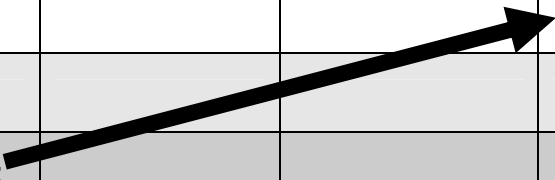
AXIO 2 provides insight into how companies currently operate:
-**Top management** defines the strategy
-**Middle management** brings organizational structures and systems into line with the new strategy
-the **Collective** (first line managers and staff along with Top and Middle Management) carries out operations within this new framework.

According to this way of operating, top management reflects on strategy alone, then asks middle management to adjust organizational structures and systems accordingly. It is at this point that implementation difficulties arise, because nothing says that middle management and top management necessarily share the same strategy vision—particularly in a very large corporation. If people don't see the point of the strategy, they are liable to put their own spin on it or resist it. At the end of the process, everyone will be called upon to act. This requires that they understand the rationale of the new strategy, structures and systems, and move into action.

The following grid clarifies the problem of resistance to change and why the collective dimension of strategy, organization and systems has to be taken into account all along the way—from strategy to operations, from mental shift to collective action—not just when it comes time for operational rollout.

Players/ Elements	Strategy	Organization	Systems	Operations
Collective				**Collective action**
Middle management				
Top management	**Mental Shift**			

What path should be taken to get from mental shift to collective action? The approach shown in the following table for defining and deploying a strategy, organizational structures and systems is more

likely to effectively mobilize collective intelligence, because it creates a framework for intellectual cooperation.

Players/ Elements	Strategy	Organization	Systems	Operations
Collective	**3**	**5**	**7**	**8**
Middle management	**2**	**4**	**6**	
Top management	**1**			

In this example, top management develops a strategy (1), then mobilizes middle management to enrich it (2), and then solicits the collective intelligence (3). Organizational structures and systems follow the same path, starting with middle management (4, 5, 6 and 7). This represents a top-down approach to deployment. But the opposite approach is also possible, letting strategy (and/or organizational structures and systems) emerge bottom up from first line staff to top management. In this case, the order would be: 3, 2, 1 for strategy, 5 then 4 for organization, 7 then 6 for systems.

Such an approach, whether top-down or bottom-up, has the dual advantage of **validating whether the proposed strategy, organizational structures and systems will be "right" overall**, and **ensuring coherence between the company's strategy** (strategy column) **and the objectives defined by managers to deploy that strategy throughout the company** (operations column).

At every level of the organization, strategy is shaped by managers responsible for defining their particular entity's objectives to implement it. Just as, in the political realm, laws have to be translated into implementing regulations in order to be applied, so a strategy is translated into objectives. It is important to ensure congruency between those objectives and the strategy, and among the objectives themselves.

Upon learning of the AXIO 2 approach, some people might object that it will waste a lot of company time without any clear cost/benefit advantage. True, the traditional approach is faster up front, but people forget to calculate in the time cost of a poorly understood, poorly applied strategy that creates a staff uproar and ends up lining the pockets of change-management consultants. Doesn't the very existence of change-management consultants answer the question of whether it is worth adopting an AXIO 2 approach?

Depending on the particular circumstances of in which a company finds itself, applying this approach saves a lot of time and money. But to achieve the same level of quality or higher in the same amount of time, a collaborative intranet is essential. Technology is what makes this approach realistic.

It is to be expected that trade unions faced with this approach will attack it. Any unions present in the organization are liable to perceive it as taking power away from them. But they themselves could use it as a tool for dialog between labor and management. It all depends on the paradigm under which the union operates: battle (class struggle) or debate (seeking win-win-win solutions for employees, management, and the company)

C. Establishing a sustainable approach to KM

Creating and sharing knowledge are intangible activities that can neither be supervised nor forced out of people. They happen only when people cooperate voluntarily. As the Nobel laureate economist Friedrich Hayek has argued, "Practically every individual…possesses unique information" that can be put to use only with "his

active cooperation." Getting that cooperation may well turn out to be one of the key managerial issues of the next few decades.
(Chan Kim & Renée Mauborgne, Harvard Business Review, January 2003, p.134)

The problem of KM is simple. You can order someone to say what you know he knows, but you cannot order him to say what you do not know he knows. He has to say it **voluntarily**, i.e. want to cooperate.

1. Put intellectual cooperation before knowledge management?

KM is one of the pillars on which an intelligent organization stands, yet companies have a very difficult time implementing KM initiatives, much less sustaining them. As for collective intelligence, people talk about it, are vaguely interested . . . let's wait and see if competitors jump on the bandwagon!

Companies have thus focused their efforts on what appeared the most straightforward—manage knowledge—and put off the issue of intellectual cooperation, which appeared more complicated to implement than electronic document management software. But as the AXIO matrix shows, CI and KM are inextricably linked. You cannot do one or the other; you need both. CI feeds KM, in that the primary activity of reflection consists of generating ideas and transforming information. And KM feeds CI, since reflection is based on what has already been capitalized within the organization.

But even beyond CI and KM being mutually enriching and complementary, the creation and sharing of information always fundamentally comes back to human interaction. From others we learn and with others we share.

Knowledge capitalization and sharing are acts of intellectual cooperation. *Sharing* is in fact one of the three key values of collective intelligence. The reason why so many KM initiatives have failed is probably lack of intellectual cooperation. No KM initiative will last without a collaborative contract. You cannot have knowledge management without collective intelligence.

2. Approaching KM: a few guidelines

Here are a few guidelines on approaching KM:

What?	- Knowledge (concepts, procedures, …) - Know-how (best practices, methods, ...) - After-action reviews (lessons learned) - Cognitive networks: Who knows what? (Expertise identification)
How?	Here are the alternatives to consider when designing a KM initiative: - Collective (professional communities) or Individual - Comprehensive (all information) or Strategic (critical information) - Centralized (at one entity) or Decentralized (at multiple entities) - Technological (search engine, automatic indexing) or Human (intellectual cooperation)
What are the conditions for success?	- Integrated with an action, an operational objective, so it's meaningful - Mobilized collective: Everyone is responsible for capitalizing knowledge - Natural: must be able to capitalize knowledge without even realizing it - Recognition and power (What do I get?) go to those who share knowledge (rather than to those who do *not* share information, as it usually is today) - Based on collective intelligence to increase quality and quantity of information - Based on appropriate, powerful software

What is your return on investment?	The productivity of knowledge cannot be measured, but the costs related to an absence of KM can: - Decision-process errors for lack of information - Loss of market share for lack of innovation, creativity - Loss of productivity for failure to share best practices and feedback
What are the missions of a community of practice?	- Capitalize accurate, complete, intelligible information - Transfer information useful to the whole company - Leverage existing information (innovation) - Keep a strategic eye on emerging phenomena (enhance knowledge)

Today, KM is not a task that inspires pride. People imagine it means being some kind of archivist or librarian. KM is often performed by people who are not expected to reflect but to support those who do. As a fundamental activity essential to the functioning of an organization, KM should be the common responsibility of everyone, not left in the hands of a few.

This is why KM initiatives must be included in an organization's **performance evaluation system** (e.g. annual review) and **recognition system** (e.g. remuneration, bonuses, non-financial acknowledgement). If I'm going to contribute, capitalize knowledge, offer ideas, I have to know what I will get in return (social or financial recognition) and what purpose my KM efforts will serve (what they will do for the company).
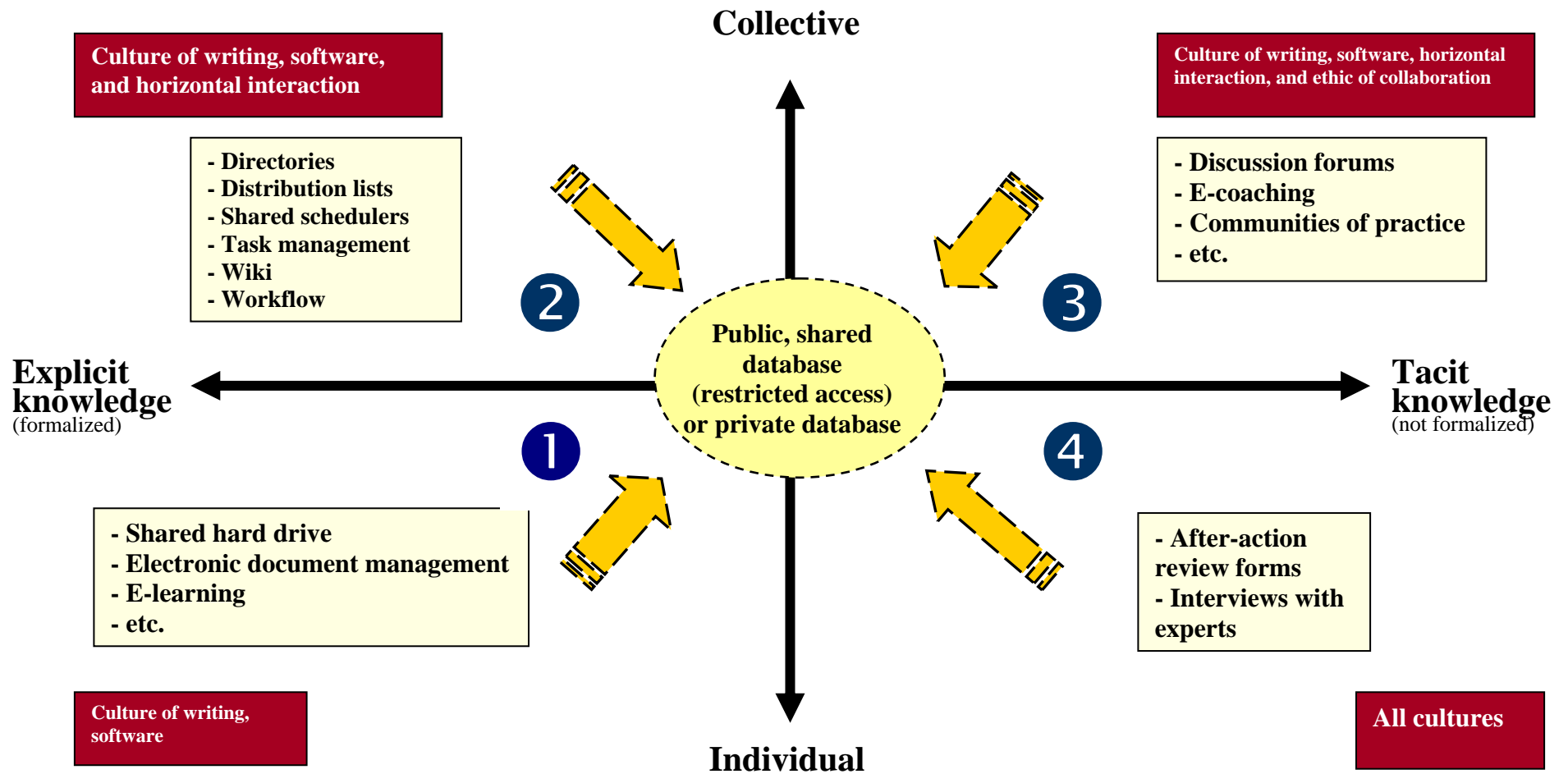
The above is but a brief overview of knowledge management. In the bibliography you will find more in-depth works on KM.

3. Ensure congruency between tools and values

Before a KM project is launched, it can be useful to conduct a study to:

- Map cultures and management modes with a view to KM: Which entities within the organization are ready for KM? How can they be helped to evolve?
- Identify the various tools, software and methods already being used for KM and define what approaches could be implemented without too much cultural resistance.
- Inventory the expressed and latent needs of local entities and the organization as a whole.

The results of this study will reveal the current status of the organization, clarify where it can and wants to go, and serve as a basis for the KM project specifications. The study can also provide insight into the congruency between tools and values according to the following matrix:

Collective

Culture of writing, software,
and horizontal interaction

Culture of writing, software, horizontal
interaction, and ethic of collaboration

- Directories
- Distribution lists
- Shared schedulers
- Task management
- Wiki
- Workflow

- Discussion forums
- E-coaching
- Communities of practice
- etc.

2

3

Explicit knowledge
(formalized)

Public, shared
database
(restricted access)
or private database

Tacit knowledge
(not formalized)

1

4

- Shared hard drive
- Electronic document management
- E-learning
- etc.

- After-action
review forms
- Interviews with
experts

Culture of writing,
software

All cultures

Individual

There are four quadrants in this matrix:
- Quadrant 1: individual level, explicit knowledge
- Quadrant 2: collective level, explicit knowledge
- Quadrant 3: collective level, tacit knowledge
- Quadrant 4: individual level, tacit knowledge

Each quadrant corresponds to specific tools that call for particular cultural requirements. A "software" culture, for instance, refers to the ability to manage a human interaction through groupware. Only quadrant four does not carry any cultural constraints. In this case, there are other constraints (e.g. technological, financial, organizational) that depend on each organization and cannot be analyzed in the absolute using this matrix.

The individual level is the foundation that feeds into the collective level. It is risky to move ahead on the collective level without having a solid individual base. But the individual level cannot be effective without the collective level, because the collective level is what gives it meaning. Individual motivation feeds on collective competitive ambition.

This matrix provides a means of diagnosing the whole range of tools used within an organization. To be high performing, an organization generally needs to use all of the tools on this matrix, not just some, unless the organization is very small. Analyzing the tools used makes it possible to identify which areas require priority action, particularly regarding tacit knowledge, which can disappear overnight when someone leaves the organization.

It is also important to analyze the core of the system, ensuring a proper distribution between private, shared and public databases (see Chapter 5, Part B on confidentiality).

Using this matrix, you can select tools as a function of your organization's culture, or determine how to change its culture according the tools needed. You can see what KM initiatives are immediately possible, and what will first require structured groundwork in terms of tools and support. If the culture is too vertical, too oral, too implicit, too face-to-face, a KM initiative focused on quadrants 2 and 3 and to a lesser extent quadrant 1 will fail (regardless of the financial and technological resources invested). Instead, the initiative could start out in quadrant 4, which would then serve as a basis for moving into the other quadrants. Ultimately, a KM initiative within an organization should integrate all four quadrants.

As can be clearly seen in the above matrix, a company has to develop a culture of horizontal interaction, writing, software and an ethic of collaboration in order to really use all of the tools. With respect to AXIO, this matrix fits into step S5, when it is a matter of selecting the right tools to capitalize the knowledge created in steps 1 through 4 according to the objective to be achieved:

Steps	S1	S2	S3	S4	S5	S6
Players/ Operations	Research/ share information	Reflect	Consult	Decide	Capitalize/ share information	Act
Collective (Everyone)	Collective research	*Collective intelligence*	All stakeholders	Collective decision		Collective action
Collegial (sub-group)	Collegial research	Collegial intelligence	Some stakeholders	Collegial decision		Collegial action
Individual (one person)	Solitary research	Individual intelligence	One person	Solitary decision		Individual action

Capitalization may, for instance, require bringing in a consultant, involve a community of practice, or simply be a matter of the company's KM manager integrating it into electronic document software. Incidentally, communities of practice are not for large companies only. Trade associations can also serve this role. Even inter-company communities of practice are conceivable.

Integration of this KM matrix into the overall AXIO matrix highlights the fact that KM must be integrated into operational initiatives. Take the following **illustration**: Suppose the KM in step 5 in the AXIO matrix is undertaken through a community of practice. The team involved in the preceding steps will be asked to identify what information will be useful to the community of practice and then to

formalize that information. Members of the community of practice will then analyze the information, validate it, contextualize it, and then leverage it, identifying for example how it might contribute to innovation.

The community of practice will regularly provide the KM department with the knowledge it deems useful to share on the organization's general database. The KM department will then be responsible for categorizing the information such that it can easily be found using a search engine. If the information cannot be found, either step 1 of the AXIO process will fail or the KM department will be barraged with requests.

Operational initiatives—action through the AXIO matrix—clearly enhance the content of KM tools at the function level (KM department, communities of practice, etc.). Functional initiatives in turn enhance the content of KM tools for step 1 of future operational initiatives. The process loops back from step 5 to step 1.

Chapter 9
A live experiment in collective intelligence!

> *If you think knowledge is power, you aren't living in the real world. Knowledge changes so fast that if you try to hold onto it, you end up with nothing. To get power, it is much more effective to share knowledge and thus build the basis for a reputation. If people think you have key strategic knowledge, you will have power within the organization.* Richard McDermott, President of McDermott Consulting (From "La gestion du savoir", proceedings of the November 2003 colloquium organized by CEFRIO: http://www.cefrio.qc.ca/pdf/ActesGestionDuSavoir.pdf)

This quote describes a common-sense reality that unfortunately not everyone understands. But we can implement this idea here and now, creating the basis for a *collective* reputation! Chapter 9 of this book will thus be open to everyone and co-authored. Here, the book becomes interactive, written by readers and by the author.

Here are two questions to jumpstart the writing of this chapter:

A. What do you think about how collective intelligence is managed in your organization? Are there lessons you have drawn from experience? Cases you would like to present?

To respond to either or both of these questions and read already-published contributions by other readers, go to: www.axiopole.info and look for the Collaborative Space

B. What approach, tools and methods would you propose for developing collective intelligence in your organization?

idem

Conclusion

This book shows that while it is important to know how to cooperate and have the means to do so, everything begins with how people think, with culture, values, beliefs, and hence the desire to cooperate. This desire corresponds with a culture now emerging in industrialized countries, a culture characterized by:

- **Horizontal** (non-hierarchical) organizations that leave a lot of room for freedom of expression and participation (increasing calls for a more participatory democracy are an expression of this),
- **Software** taking on ever greater importance at work (software packages, intranet) and at home (online, multiplayer video games that develop a culture of cooperation—"Play Together" exclaim advertisements for the Xbox). In France, 87% of 12 to 17 year olds are familiar with the internet and 93% with the personal computer.
- Human interactions that reinforce use of the **written word** (e.g. cell phone SMS, email, word processing).

The emerging culture is that of the Creation-Communication age presently giving rise to an information and knowledge-based society, a culture that transcends all ages and fosters intellectual cooperation. In the future, companies that have not adapted to this culture will have a terrible time trying to recruit and retain employees. The talent war will in part be fought over how well the values companies propose match the values most people expect. More than today, people will join and leave companies for cultural reasons.

But today's cultural evolution is primarily happening in people's personal lives, and that is not enough to spontaneously create cooperation at work. This leap requires training and coaching on relational techniques, a new social contract and a collaborative contract, because the responsibility for collective performance lies not only with managers but the collective!

How much longer will we have to wait for collective-intelligence management to emerge in our organizations?

From a **technical** standpoint, the process of fostering collective intelligence described in Chapter 1 (cf. *C. The Process of Fostering Collective Intelligence*) shows that it takes approximately three months for a small company and about 18 months for a very large company.

From a **cultural** standpoint, there will be no collective-intelligence management in companies whose executives do not share the corresponding values and beliefs (desire to cooperate). There is no point in waiting for that which will not happen as long as they are in place.
There will be collective-intelligence management in companies whose executives want to cooperate. What they are now waiting for is a turning point, a demonstration—**proof of the operational value of managing collective intelligence.** That is one of the objectives of this book. We can only hope that this book, along with many others, will find its way into the hands of such executives.
Given that only a small minority of executives espouse the values of collective intelligence, particularly in France, there will at first be but a few "visionary" executives who implement it. Their organizations will increasingly outperform others. Gradually the idea will catch on among other executives, who will move into action, either of their own initiative, or under the pressure of declining performance. Only then will the practice become established on a broader scale.

Internationally, developing countries like China will certainly move more quickly into the Creation-Communication age and toward managing collective intelligence than will industrialized countries, which first have to unlearn their current paradigm. Countries with a more collective culture (in Asia, for example) can be expected to move toward collective intelligence more easily than countries with a more individualistic culture. In a 1975 speech before Western executives, Konosuke Matsushita, founder of Matsushita Electric, described his vision of the future:

Your Western organizations are Taylorian; worse yet, so is your thinking. You are completely convinced that you are running your companies well by dividing them between managers on one side and workers on the other, between those who think and those who tighten screws.

Us (Japanese organizations), we are post-Taylorian: We know that business has become so complicated, so difficult, and the survival of a company so problematic in an increasingly dangerous, unexpected and competitive environment, that a company must mobilize everyone's intelligence every day.

Management is the art of mobilizing and gathering everyone's intelligence in service to what the company is trying to accomplish.

Will the Japanese and Chinese be more quick to espouse collective-intelligence management than Americans, Germans, and the French?

It is impossible to say for sure how long it will take for this book to become a large-scale reality, but it has already begun to have an effect in some companies (see Case Studies in Chapter 1). As Margaret Mead said: "Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it's the only thing that ever has."

In a **production economy** (Industry-Commerce age), value creation depends on land, labor and capital. In a **knowledge economy** (Creation-Communication age), value creation depends mainly on the ideas and innovations to be found in people's heads. Those ideas cannot be forcibly extracted. All one can do is **mobilize collective intelligence and knowledge.**

Managing collective intelligence implies a radical change that will naturally elicit a lot of resistance. But we're talking about a **social innovation**: no one will want to go back to the way it was! As always, the problem lies "not in developing new ideas but in escaping from the old ones." Keynes

This book began with a series of questions; only one is needed to end it: **What is your own conclusion?** Here are 7 possible conclusions to help you find your own:

The Epistemological Conclusion: "This book is interesting, but lacks epistemological rigor." Or, "I agree from a practical standpoint, but disagree from a theoretical one. (Are you an "expert," an "intellectual"? Then you surely are familiar with the theory of XYZ which lays bare all of the epistemological inadequacies of this book and will certainly be of great interest to other "intellectuals").

The Problematic Conclusion: "I don't have time. I've got my job to do. But it would be very useful to those who have the time (See Chapter 1, point B on the "time argument").
Or, "This book is based on the premise that everyone is intelligent, but everyone knows that's not true. How do you manage people who don't get the big picture, who are all over the map? (See Chapter 6, point A, 1st belief on situational intelligence).
Or, "Managing collective intelligence makes for too much democracy. If you let people get involved in reflection, they will demand to be included in deciding." (See the Introduction, regarding the difference between collective reflection and collective decisionmaking; the AXIO matrix with steps 2 and 4 on three levels; reread all of Chapter 3; see Chapter 4, point D on the consequences of collective decisions).
Or, "Managing collective intelligence will create frustration because people will not like it if the manager does not follow their suggestions." (Reread Chapter 3 as well as the whole book ;-)
If you see any similarities between this conclusion and reactions the author describes, that's no accident. It is practically a foregone conclusion that people who approach the book intent on coming away self-justified that their way of being and working is right will find the whole thing problematic.

The Backburner Conclusion: "It's all very interesting, but our organization isn't ready for that." Or, "There's nothing new in this book. We're doing it already." Or, "We don't need it." Or "We're not doing it, but neither is anyone or hardly anyone else. We should definitely hold off until the day when competition from those who do forces us to as well." (Rejection phase of the change process).

The Homeopathic Conclusion: "It's got to be tested. We could do a pilot project to see how these tools and methods might be introduced." (Negotiation phase of the change process).

The Let's-go-for-it Conclusion: "We've got to implement a strategy for developing collective-intelligence management in our organization—it's a matter of sustainable development!" (Acceptance phase in the change process, or where a culture of collective intelligence already exists).

The Creative Conclusion: "I don't fit any of the 5 possible conclusions above. That's not me! I have my own conclusion." (Great! Be sure to "share" it so it can be "capitalized").

The Cocoon Conclusion: "I don't know what my own conclusion to the conclusion of this conclusion is so it's hard to conclude…

If there were a single point to get out of this book, it would be to understand that besides individual needs, there are also collective needs, which affect the sustainable development of an organization. **Managing collective intelligence is one answer to collective needs.**

Executives must respond to individual needs: security, recognition, belonging, responsibility, self-fulfillment… But they must especially help people become aware of collective needs and overcome the conflicts that can arise between individual needs and collective needs.

This book is a practical guide to help you create that awareness and follow in the footsteps of intelligent companies already practicing collective-intelligence management either formally or informally, publicly or quietly.

Change takes time, but it will happen. Because as people who already work in an intelligent enterprise will all tell you:

Everything about it is wonderful!

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Glossary

- Collaborative, cooperative and collective: Differentiating definitions

Collaborative (adj): several people working together to achieve an objective
Cooperative (n): the pooling of resources, as in an agricultural cooperative
Collective (n): a group of people

- Collaboration and cooperation: A case of tangled connotations

The concepts of **collaboration** and **cooperation** have become widely confused with that of **communicating or providing information**. Purely communication-focused tools, methods and software, for instance, are often trendily billed as facilitating **collaborative work**. Throughout this book, collaboration and cooperation are specifically and synonymously used to mean: **to voluntarily work with other people to achieve an objective**. For most people, both terms generally mean the same thing. If we go back to their Latin roots, this makes sense: etymologically there is little difference between *co laborare* and *co operare*.

But **cooperation** and **collaboration** carry different connotations that become important in the management context. In English, **cooperation** often denotes acquiescence—obligingly or less-than-wholeheartedly going along with something. Criminal defendants **cooperate** with police to secure a plea bargain. Workers **cooperate** when they do what their boss wants. **Cooperation** implies a certain power dynamic. In contrast, **collaboration** denotes a mutual desire and initiative to work together as equals.

Such a distinction internationally—at least among experts—could be helpful in today's literature on management. But there's a hitch: the respective connotations of **cooperation** and **collaboration** don't necessarily "translate" across languages and cultures. In French, for instance, they are practically the reverse.

Based on a definition offered by Jean-Louis Swiners, co-author of *L'intelligence créative* (Edition Maxima, June 2004), to **collaborate** is to work **for** someone (e.g. one's boss), while to **cooperate** is to voluntarily work **with** one or more other people (e.g. superiors, peers, subordinates). This reversed distinction from the English, arises from the fact that in business French, one's direct supervisor (N+1) is called a manager (*manager*), a peer (N) is referred to as a colleague (*collègue*) and a subordinate (N-1) is called a "collaborator" (*collaborateur*). Consequently, the term *collaboration* implies a subordinate supervisor/supervisee relationship.

Thus, in the French sense, *collaboration* within a team occurs primarily through the manager, because that manager's "collaborators" (supervisees) are not supposed to have a direct working relationship with each other (except as defined and allowed by the manager). The job of the manager is to **coordinate** the work being performed by members of the team so as to ensure coherency (coordinating, assigning tasks).

In contrast, *coopération* implies a "relatively" egalitarian relationship. While people may be at different rungs on the org chart, their working relationship will not be (too) influenced by those differences in status. The French would say that people are "cooperating" when they **voluntarily** work **with** each other to achieve a common objective. (The presence of this word *voluntarily* in the definition implies that there exists a desire to cooperate and hence an ethic of collaboration.) When a team is cooperating in this way, the manager becomes a facilitator among people who all have the same level of information. His role is to facilitate achievement of the objective.

In reference to the AXIO matrix (see Chapter 2), steps 1, 2 and 3 are heavy on *coopération*, because they require that people voluntarily come together on an equal footing to identify ideas for solving a problem. Steps 4, 5 and especially 6 are more about subordinate *collaboration*. Day to day, collaboration and cooperation go hand in hand. A manager alternates between moments of **individual**

management that call for cooperation from subordinates (French *collaboration*), and moments of **team management** that call for voluntary, egalitarian collaboration (French *coopération*). To reflect this reality—and reconcile all of the conflicting connotations across languages!—perhaps we need to coin a word that refers to both. If it didn't defy pronunciation, **coopellaboration**?

- *Intranet*, *Extranet* **and** *Internet* **Defined**

Internet: network open to the general public
Intranet: network internal to an organization and not accessible to anyone outside of it. Functions according to the same principle as the internet.
Extranet: intranet with internet gateways allowing interaction with people outside the organization.

- *Data*, *information* **and** *knowledge*: **Distinguishing definitions**

Data = an observation, e.g. "The temperature is 30°F."
Information = an analysis of data, e.g. "It is cold."
Knowledge = experience regarding information, e.g. "The heat should be turned on."

To be effective, KM must focus primarily on knowledge. For the sake of efficiency and quick reading, the term *information* has been used in this book to refer to data, information and knowledge indiscriminately.

- *E-collaboration* **and** *e-management* **defined**

E-collaboration is a concise reference to the concept of computer-assisted collaborative work undertaken by multiple people at multiple locations.

E-management refers to a management approach that integrates information and collaboration technologies. It includes use of management software packages, software enabling collaborative work, and many other applications.

- Computer-assisted collaborative work (from the French *TCAO: Travail collaboratif assisté par ordinateur*) is synonymous with Groupware (US), Collecticiel (Quebec), and e-collaboration.

Citations

"The point of the Work-Out is to give people better jobs. When people see that their ideas count, their dignity is raised. Instead of feeling numb, like robots, they feel important. They **are** important… We're trying to differentiate GE competitively by raising as much intellectual and creative capital from our work force as we possibly can.," Jack Welch, former CEO GE (from "Control Your Destiny or Someone Else Will," Sherman, Currency Doubleday, 1993, p. 248)

"L'accès au savoir, l'échange de savoirs et les espaces virtuels de travail nous donnent le meilleur système d'apprentissage au monde."
(Access to knowledge, the exchange of knowledge, and virtual work spaces offer us the best learning system in the world.)
Hubert St-Onge, CEO, Konverge and Know

"Les communautés professionnelles sont des "lieux" privilégiés d'intelligence collective, d'innovation, de création de valeur "
(Communities of practice provide a unique "space" for collective intelligence, innovation [and] value creation.)
From "Manuel du Knowledge Management," Jean-Yves Prax, Editions Dunod, 2003

"L'information ne doit pas être une source de pouvoir pour celui qui la détient mais pour celui qui sait créer de l'intelligence collective en la partageant"
(Information should not be a source of power for people who hold it but for people able to create CI by sharing it.)
From "Conduire l'action publique," Claude Rochet, Editions Village Mondial, 2003

"Security is an illusion, it does not exist in nature. Life is a daring adventure or nothing at all." Helen Keller

"The human being must always be treated as a subject and never as an object." Kant

"Rien n'est plus dangereux qu'une idée, quand on a qu'une idée" Alain
(Nothing is more dangerous than an idea, when it's the only one you have.)

"L'ennui dans ce monde, c'est que les idiots sont sûrs d'eux et les gens sensés pleins de doutes"
(The whole problem with the world is that fools and fanatics are always so certain of themselves, but wiser people are so full of doubts.)
Bertrand Russell

"Il vaut mieux mobiliser son intelligence sur des conneries, que mobiliser sa connerie sur des choses intelligentes."
(Better to approach a mess intelligently, than to make a mess of what had been intelligent.)
From the French cartoon *Les shadocks*, by Jacques Rouxel

Appendix

Appendix 1: Self-diagnostic Questionnaire

We are going to analyze how you manage a team. If you manage multiple entities, you are managing multiple teams. As your frame of reference, select a specific team within a single entity. A team must be a group of people who jointly undertake collective action on a regular basis.

Within the team serving as your frame of reference, are your management activities more solitary (you work alone), collegial (you involve a subset of your team), or collective (you engage all members of your team)? For each question check the box corresponding to your answer.

Questions	Answers			
Who gathers the information needed to make a decision?	☐ Most often, you assign one person to gather information on behalf of everyone involved in making the decision, you do the research yourself, or you don't do preliminary research.	☐ Most often, information gathering is done collegially. A standing or ad hoc group is tasked with getting the information.	☐ Most often, information gathering is done collectively. When there is a decision to be made, everyone gets involved according to his or her availability.	**S1**
Who reflects in lead-up to a decision?	☐ Most often, you reflect alone.	☐ Reflection is most often collegial. You select a few people with whom you form a work group to analyze the situation and find solutions.	☐ Reflection is most often collective. To analyze the situation and find solutions, you involve everyone who has a potential stake in that reflection.	**S2**
Whose opinion is sought on decisions to be taken?	☐ Most often, you consult no one.	☐ Most often, you consult a few of the people affected by the decision to be taken.	☐ Most often, you ask the opinion of everyone affected by the decision to be taken.	**S3**
Who decides?	☐ Most often, you alone decide.	☐ Most often, you select some of the people affected by the decision, then you decide together.	☐ Most often, you gather together everyone affected by the decision, then you decide together.	**S4**
Who organizes the capitalization and sharing of information?	☐ Most often, you let people capitalize their own information themselves however they want.	☐ Most often, you take a collegial approach and involve a few people in selecting which information will be capitalized and shared.	☐ Most often, you take a collective approach. Everyone is involved in selecting which information will be capitalized and shared.	**S5**
In a team context, who carries out the team's objectives?	☐ Most often, objectives are carried out by a single person on the team.	☐ Most often, a few members of the team are tasked with carrying out objectives.	☐ Most often, the whole team is involved in carrying out objectives.	**S6**

Now draw a line connecting all of the boxes you have checked. The areas to work on are those where you have checkmarks in the first column (which corresponds to the individual level), except for line S4.

Appendix 2: How To Manage a Team

As a supplement to the chapter "Know How to Cooperate," here are a few guidelines on managing a team:

A. Team performance characteristics

1. Members of a **low-performing** team have a **weak ability to work together.**

This is always the case when a team has just been formed: it is a group of strangers, not a team.
A team is low-performing when:
- There is **little spontaneous cooperation** among its members,
- **Clicks** form based on personal affinities.
- **People don't spontaneously speak up** much during meetings,
- The group tries to reach **unanimity**, avoiding a divergence of views,
- **Informal interactions** always remain **strictly work-related**,
- When problems arise, the team **expects the manager to decide or referee**,
- Trust among team members is **weak or nonexistent**.

2. Members of a **high-performing** team have a **strong ability to work together.**
A team is high-performing when:
- It has **shared experience,** a culture, a past,
- **Cooperation** between members of the team is daily and spontaneous,
- There is frequent **debate** because team members all express and argue for their ideas,
- **Natural leaders** emerge,
- The team is **self-sufficient**: it usually organizes itself and resolves internal conflicts without going to the manager.

B. Observing your team

1. Do you have a *team* or a *group of individuals*?

Does your team have . . .	Yes	No	Some-what
A **leader** everyone in the team recognizes as such?			
A **common mission** shared by all members of the team and requiring internal collaboration?			
Clearly defined **responsibilities** everyone is aware of?			
Complementary **skills** devoted to the mission?			
T**eam spirit** in combination with an ability to work together and spontaneously cooperate?			

If you answered "no" or "somewhat" to one or more of these questions, your team may be more like a group of lone individuals. In this case, it is important that you create a team dynamic among your staff.

2. How well does your team perform?

The following questionnaire is designed to help you measure your team's performance not in terms of results achieved, but collective effectiveness. There are 14 affirmations. For each one, indicate whether you have observed the behavior:
1 rarely
2 sometimes
3 often
4 very frequently

		Score 1 - 4
1	Team members naturally help each other	
2	There are personal conflicts that require my intervention	
3	Members of my team know how to debate conflicting ideas	
4	During meetings, everyone listens to others without interrupting them	
5	During meetings, my team members rarely speak up	
6	Friendships and interactions that touch on people's personal lives are valued more than work-related interactions	
7	Team members often offer me suggestions on how we could improve the way we are structured and operate	
8	The team expects me to structure its work	
9	It is hard to reach a consensus.	
10	Everyone feels invested in our collective success.	
11	There are natural leaders in the team.	
12	Members of my team try to reach unanimity on decisions.	
13	During meetings, I often intervene to regulate and organize discussion.	
14	In emergencies or when difficulties arise, the team turns to me for solutions.	

Enter your scores into the following table:

Affirmation	Score	Affirmation	Score
2		1	
5		3	
6		4	
8		7	
12		9	
13		10	
14		11	
Total A: **(low-performing team)**		**Total B:** **(high-performing team)**	

If total A is higher than total B:
Your staff have a weak ability to work together. They are not very skilled at or motivated to cooperate with each other. They are very focused on their own bilateral relationship with the manager and don't have much connection among themselves. Your team does not yet really exist.

If total B is higher than total A:
Your staff have a good ability to work together. They are skilled at and motivated to cooperate with each other. They have many connections among themselves.

If the difference between total A and total B is less than 5: Your staff have the potential to work together, but aren't getting the manager the impetus they need to develop their abilities and desire to function as a team.

C. Observing team results

A team that is effectively facilitated will show improved performance within the company. To evaluate results, you need a comprehensive view of the situation. Here are a few questions to help you:

	Yes	No	Somewhat
1. Are **internal and external customers satisfied** with the results achieved by my team?			
2. Have the **results achieved** by my team **met** qualitative and quantitative **expectations**?			
3. Is the **productivity** of my team satisfactory, especially as compared to other teams doing similar work?			
4. Is the team **effectively organized** internally?			
5. Does **communication** in my team happen smoothly (e.g. one-on-one meetings, group meetings, postings, messaging)?			

If you answered "no" two or more times, your team may be under-performing operationally. It needs your structured facilitation to improve its results.

D. Evaluating a team

As an example of how this can be done, here is the individual and collective performance evaluation grid created by the Human Resources Agency of the U.S. Federal Government:

(Downloaded from http://www.opm.gov/perform/wppdf/teams2.pdf (page 7 of the document)

	Behaviors/Process Measures	Results Measures
Individual Level: An employee's contribution to the team	Whether or how well the employee: cooperates with team members, communicates ideas during meetings, participates in the team's decision-making processes.	The quality of the written report, the turnaround time for the individual's product, the accuracy of the advice supplied to the team, the status of the employee's case backlog.
Team Level: The team's performance	Whether or how well the team: runs effective meetings, communicates well as a group; allows all opinions to be heard, comes to consensus on decisions.	The customer satisfaction rate with the team's product, the percent decline of the case backlog, the cycle time for the team's entire work process.

In the future, use of collaborative intranets will make it possible to assess the performance of a team in a more refined, equitable way, evaluating not only operational results but how they were obtained, by analyzing the quantity and quality of team cooperation.

Here is a sample team-performance analysis table automatically generated by some groupware during discussion of a new-product launch:

Estimated Productivity: Average					
Individual skill	Average	Individual Performance	High	Overall performance	Average
Individual motivation	High				
Collective skill	Average	Collective performance	Low		
Collective motivation	Low				

Appendix 3: Sample Collaborative Contracts

Here are two sample collaborative contracts (one for employees, one for partners) that have served as a springboard for several companies. These contracts were co-developed with the help of a collective-intelligence expert and software that supports collective reflection (eTeam Management software provided by Axiopole). Remember that there exists no **model** collaborative contract because such a contract must be co-developed with the organization's own stakeholders (employees, partners, etc.). These two sample contracts are meant as a source of inspiration and a starting point for co-developing your own contract. The contents of that contract must be a function of your organization's current culture and the target values defined by its leader (relative to collective intelligence). These contracts have the same legal force as any other contract.

1. Sample collaborative contract for employees (from the WDHB Consulting Group contract):

Between WDHB Consulting Group

and

(First name of employee)

PREAMBLE

This contract is based on the **values of** WDHB Consulting Group:

(Lists of company values)

This contract is based on the following **beliefs**:

- We can add value at particular times in particular situations to reach a particular objective (situational intelligence).

- Every one of us can improve, develop. We all possess potential. Everyone's potential and intelligence need to be valued and developed.

- We each defend our own interests but are able to care about the common interest and sacrifice some of our own to protect the sustainable development of the organization. There is, of course, a dose of selfishness in each of us, but also a dose of altruism, which a manager, an organization must know how to bring out.

The above preamble constitutes an integral part of this contract.

In light of the above, the parties agree to the following:

Article 1 – Process of Individual Cooperation

The process of individual cooperation corresponds with the following behaviors:

- I give information to someone I think needs it, even without being asked.

- I devote some of my work to helping others accomplish theirs, even though doing so does not help me achieve my own objectives. I do this because it contributes to collective performance. I do it spontaneously and not because my manager has directed me to.

- I formulate and spontaneously offer ideas to improve the performance of my organization.

- I try to build win/win relationships at work. I care about others' interests as much as my own, but without letting others take advantage of me. I want to win, I want the other person to win, and I want the community to win—"win-win-win."

- I capitalize and share information, using the collaboration tools which WDHB has made available: the collaborative intranet and the knowledge management system.

- I do not claim credit for other people's ideas and do not obscure the origin of ideas: everyone must get credit for what he or she does. But ideas do not belong to people. They are made available to create other ideas, which will also build collective intelligence.

- Insofar as possible, I try not to interpret an idea (especially by taking it out of context) before validating this interpretation with the originator of the idea.

- I do not judge people, but people's ideas. It is OK to question an idea, provided that I do not question the professional and personal qualities of the person who voiced the idea. Everyone must be able to express every idea he or she thinks could be of interest, without fear of being judged by others.

- I agree to my ideas being evaluated, countered or transformed in the context of discussions and debates related to the company's business. A manager cannot use his or her power of position to quash debate of his or her own ideas.

Lack of time is not an acceptable argument for not implementing the process of individual cooperation.

Article 2 – Process of Collective Cooperation

The process of collective cooperation corresponds to the following matrix:

AXIO	S1	S2	S3	S4	S5	S6
Players/ Operations	**Gather and share information**	**Reflect**	**Consult**	**Decide**	**Capitalize and share information**	**Act**
Collective (Everyone)	Collective research	Collective intelligence	Consult all stakeholders within the collective	Collective decision	Collective Knowledge Management	Action directly or indirectly involving everyone
Collegial (subgroup)	Collegial research	Collegial intelligence	Consult certain stakeholders within the collective	Collegial decision	Collegial Knowledge Management	Action directly or indirectly involving part of the collective
Individual (one person)	Solitary research	Individual intelligence	One person	Solitary decision	Individual Knowledge Management	Action involving one person

WDHB Consulting Group is managed using this process of cooperation according to the resources available (human, financial and technical resources, software tools, etc.), the environment, and the date by which the objective must be achieved (degree of urgency).

The steps are not rigidly self-contained. This means that decisions may be required during the reflection stage, and reflection may be needed during the decision phase. Each column simply represents the priority focus, the main activity at that point of the process leading to action (S6).

Article 3 – Evaluation

The parties will evaluate adherence to the terms of this contract at least once a year.

The evaluation will be based on:
- electronic indicators available on the collaboration software used by WDHB Consulting Group
- observations by the manager: observable, indisputable facts regarding adherence to the process described in Articles 1 and 2.

The evaluation will be based 50% on individual objectives (results achieved) and 50% on adherence to this collaborative contract (how results were achieved).

Signed in (place), on (date)

(Signatures)

(WDHB has also created a collaborative contract with its partners.)

2. Sample collaborative contract for external partners in an extended enterprise (from the E-mergences contract) :

Between E-mergences

and

(Name of partner company)

Represented by:
First name of representative

<div align="center">

PREAMBLE
</div>

This contract is based on the **values of** E-mergences:

<div align="center">

(Lists of company values)
</div>

This contract is based on the following **beliefs**:

- We can add value at particular times in particular situations to reach a particular objective (situational intelligence).

- Every one of us can improve, develop. We all possess potential. Everyone's potential and intelligence need to be valued and developed.

- We each defend our own interests but are able to care about the common interest and sacrifice some of our own to protect the sustainable development of the organization. There is, of course, a dose of selfishness in each of us, but also a dose of altruism, which a manager, an organization must know how to bring out.

The above preamble constitutes an integral part of this contract.

In light of the above, the parties agree to the following:

<div align="center">

Article 1 – Process of Individual Cooperation
</div>

The process of cooperation between E-mergences and its partner (referred to below as the "partners") corresponds to the following behaviors:

- The partners exchange information when they think the other partner(s) may need it, even if the information has not been explicitly requested.

- The partners devote some of their work to helping other(s) accomplish theirs, even though doing so does not help achieve their own company objectives. They do so spontaneously because it contributes to the collective performance of the extended enterprise.

- The partners look for and spontaneously offer each other ideas for improving the performance of the extended enterprise to which they belong.

- The partners together build a win/win relationship in the context of their partnership. Each cares about its partners' interests as much as its own, but without letting itself be taken advantage of. Each wants to win, wants the other partner(s) to win, and wants the community to win—"win-win-win."

- I capitalize and share information, using the collaboration tools which E-mergences has made available: the collaborative intranet and the knowledge management system.

- The partners give proper credit for the ideas they exchange and do not obscure the origin of ideas: each must get credit for what it does. But beyond intellectual property rights, ideas do not belong to any company. They are made available to create other ideas, which will also build collective intelligence.

- Insofar as possible, the partners try not to interpret an idea (especially by taking it out of context) before validating this interpretation with the originator of the idea.

- The partners do not judge people, but people's ideas. It is OK to question an idea, provided this is done without questioning the professional and personal qualities of the person who voiced the idea. Everyone must be able to express every idea he or she thinks could be of interest, without fear of being judged by others.

- The partners agree to their ideas being evaluated, countered or transformed in the context of discussions and debates related to the business of the extended enterprise.

Lack of time is not an acceptable argument for not implementing the process of individual cooperation among partners.

Article 2 – Process of Collective Cooperation

The process of collective cooperation corresponds to the following matrix:

AXIO	S1	S2	S3	S4	S5	S6
Players/ Operations	**Gather and share information**	**Reflect**	**Consult**	**Decide**	**Capitalize and share information**	**Act**
Collective (Everyone)	Collective research	Collective intelligence	Consult all stakeholders within the collective	Collective decision	Collective Knowledge Management	Action directly or indirectly involving everyone
Collegial (subgroup)	Collegial research	Collegial intelligence	Consult certain stakeholders within the collective	Collegial decision	Collegial Knowledge Management	Action directly or indirectly involving part of the collective
Individual (one person)	Solitary research	Individual intelligence	One person	Solitary decision	Individual Knowledge Management	Action involving one person

E-mergences is managed using this process of cooperation according to the resources available (human, financial and technical resources, software tools, etc.), the environment, and the date by which the objective must be achieved (degree of urgency).

The steps are not rigidly self-contained. This means that decisions may be required during the reflection stage, and reflection may be needed during the decision phase. Each column simply represents the key focus, the main activity at that point in the process of moving toward action (S6).

The partners agree to participate in the process of collective collaboration, particularly during steps 1, 2 and 3.

Article 3 – Evaluation

The parties will evaluate adherence to the terms of this contract at least once a year.

The evaluation will be based on:
- electronic indicators available on the collaboration software used by E-mergences,
- observations: observable, indisputable facts regarding adherence to the process described in Articles 1 and 2.

The evaluation will be based 50% on the results achieved through the partnership and 50% on adherence to this collaborative contract (how results were achieved).

Signed in (place), on (date)

(Signatures)