

## **Geography of Communications : A pioneer. Prof. Dr Karlheinz Hottes (1925-2001)**

**Peter Graef<sup>1</sup>**



*Professor Karlheinz Hottes*

---

1. Professor, University of Aachen, Germany.

*Résumé - Après la mort récente du Pr. K. Hottes, cet article présente l'œuvre, l'influence et le rôle important joué par notre collègue dans le champ de la géographie des communications.*

*Mots clés - Karlheinz Hottes, Allemagne, Union Géographique Internationale*

*Abstract - After the recent death of Prof. K. Hottes, this article presents the works, influences and important role of this dear colleague of ours to the Geography of Communications.*

*Key Words: Karlheinz Hottes, International Geographical Union, Germany*

The scientific approach of research and analysis has always led to new findings. This will continue in the future. Doubt, enthusiasm, disappointment and curiosity will accompany them. Heated debates always focused on the purpose, the point, the justifiability and the perspective of new trends. When will a scientist be regarded as a pioneer of a new trend? Only in retrospect will we be able to award the achievements of a scientist in an ex post manner. A precursor is somebody who has a vision, regardless of any disapproval, and who is convinced by the importance of a new scientific trend, which he/she tries to impart to others and by doing so starts an innovative new way of thinking step by step.

Prof. Hottes was a pioneer with those special abilities. He has made solid contributions to many, including traditional, trends of research. His work of research had so many facets that it would be presumptuous for a next generation to judge what specialisation had he made the most important contributions. However I think there was one feature, which characterised Prof. Hottes above all: His ability to sense developments in advance, to make them know and to avoid premature judgements.

Regarding the relatively young discipline of the "Geography of Communications" within economic and social geography, Karlheinz Hottes is duly recognized as a pioneer in this field of research in Germany. This field developed in the German speaking countries considerably later than their neighbouring countries, i.e. in France and Great Britain. This development in western Europe during the nineteen eighties is noteworthy because it was relatively independent from the development in the United States.

Karlheinz Hottes was a trendsetter because the telecommunication technology only had its first major innovations in the nineteen eighties. Hottes, influenced by Walter Christaller, used the indicator "Telefonbesatz" (telephone-density) in his research of central places in the "Oberbergischer Kreis" (Northrhine-Westfalia, Germany) and analysed it more critically.

Christaller's marketplaces (centrality 2nd grade) should have a telephone exchange; in the early nineteen thirties there was on average just one telephone in 100 residents (similar to the situation in the poorest developing countries today). This is not about another treatment of Christaller's method but to show Karlheinz Hottes' early preoccupation with a more analytical approach. In his investigations about central functions of cities in the late nineteen forties, he has already

distinguished between different purposes of the telephone in shops of the non-daily demand, in business and at homes. With the example of Gummersbach, Hottes argues:

*“To examine the structure of the city of Gummersbach as a central place today (1948-1949 the author) the telephone owners were divided into groups and their proportion in the whole number of telephones were calculated. In the context of the mentioned central places of the same grade of centrality Gummersbach is leading in terms of telephones in retailing, the falling behind of shops of daily and non-daily demand as well as the low density of telephones in administrative units seems striking.” (Hottes, 1954, S.47f)*

The analytical framework was obviously sharpened long before the advent of telefax, mobile communication, ISDN and the PC as a tool for communication.

Crossing continents in seconds and as a world wide available system of communication was no topic in the nineteen fifties. Yet the “globalising” element was there. Prof. Hottes had a vision of examining the transoceanic (better undersea) telephone cables and the locational advantages of being located near to such technical installations.

The fact that a degeneration of the advantage of being a communication-technical bridgehead can come about quickly can be seen in Ireland, which was the first European contact point for a transatlantic cable in the nineteen twenties. Ireland has got hardly any relevance as a cable-bridgehead today though it is a leading country in Europe in terms of the progression of telematic potentials: for example, in the pilot schemes like the “digital towns” and as a location for call centres and finance services.

If one is looking for a milestone in the development of the geography of communication on the worldwide platform of the International Geographic Union, one has to go back to the year 1984. In the International Geographers Congress in Paris in 1984, a group led by Prof. Christian Verlaque (Montpellier) met to discuss the spatial influences of the developments of new technologies in the field of telecommunication and their effects on locational systems. This meeting attracted many scientists from the fields of the geography of industry, geography of traffic and economic geography. Karlheinz Hottes was not by any means the only German colleague who attended this IGU Paris Congress<sup>2</sup>. At that time, scepticism about the geographic viability of such a technically orientated field of research was commonplace. Yet, Hottes had shown his insights and saw “telecommunication” (the term today might be ‘venture capital’) as a potential factor which influences spatial features strongly.

France was already leading in the mid-nineteen eighties in this context in Europe and had in general a broader scientific interest in the spatial effects of a

---

2. But he was “The” German Geographer in this meeting (Bakis).

technological change. Research in economics and other social science disciplines on the assessment of the technical change was strongly supported by the French government even twenty years ago - in contrast to Germany for example. Prof. Hottes stayed in Germany and he considered communications to be of key importance in future economic development. Since this incident, Karlheinz Hottes can be seen as a pioneer of this new branch in Germany.

After this first meeting in Paris, the IGU Study Group on "Telecommunications and Communication" was formed in 1984. Prof. Verlaque became the chairman of this group, D<sup>r</sup> Bakis (then researcher at France Telecom; ten years later he moves to University of Montpellier) became secretary and Prof. Hottes became a member as a representative of Germany. A small group of eight other geographers from German-speaking countries showed interest in participating and helped Prof. Hottes in the run-up to the founding of a German-speaking team with the support of D<sup>r</sup> Weber. The group led by Prof. Hottes has proven to be stable and many ideas for work of research for the German-speaking group have evolved from this co-operation. Moreover, the team has maintained very close links with the IGU study group (later commission).

Fifteen years have lapsed. Nowadays, it is hard to imagine how the technology and the thoughts were in those days: the telefax seemed ground-breaking, the PC was in an early state of a general distribution and mobile communication on today's standard was still only utopia, the internet was not available at all.

Telecommunication as an element that influences spatial links and location qualities was only noticed by a few scientists in Germany in the mid-nineteen eighties. The geographic qualities of the infrastructure of telecommunication were very much doubted and disapproved. The approach in the field of environmental planning was equally conservative, even though the opening seemed less conservative. There was a pressure for advising the political leaders and policy makers because of the uncertainty concerning the effects, advantages and disadvantages and the consequences of a possible late start and having insufficient telecommunication infrastructure.

There were tendencies outside geography departments to deal with the spatial aspects of telecommunication. The intense search for instruments to increase the value of periphery areas led the Akademie für Raumforschung und Landesplanung (ARL) in Hannover to establish a group named "Telematik" in 1985. This group was chaired by Prof. Spehl (Trier). The reports of "Telematik" in the research- and conference reports of the ARL 1987, as well as some intermediary results of this group in environmental planning, were of significant value in shaping of the field of economic and social geography in Germany.

It was Prof. Hottes who has shown foresights in inviting this group of industrial geographers of the German-speaking countries to a conference in Koblenz in 1986. This conference, which was also participated by the German-

speaking members of the IGU Study Group, can be seen as the inaugural meeting of the group “*Telekommunikation und Kommunikation*” of the DGfG.

There was mixed expectations towards this group because telecommunication developments in those days (including the first distribution of telefax, teletext and Btx) were still mainly at their early stages. Many of these technologies were only beginning to be applied in industrial production and marketing (e.g. the just-in-time concept in car-manufacturing). There was a wider recognition of the significance of telematics, though mainly in the field of industry geographers again. The key position of linked information systems, e.g. for logistics in traffic geography, was not visible in the late nineteen eighties.

International recognition of the works of the IGU Study Group and its publications in the periodical *NETCOM* (coordinated by Dr Bakis and first supported by France Telecom) led to an enhancement of the status of the IGU Commission C18 “Geography of Communication Networks”. The Commission was still led by Prof. Verlaque / Dr Bakis and Prof. Hottes was a full member and a German representative.

There was a fundamental change in the focus of research between 1984 and 1988. The research regarding the diffusion of certain telecommunication-technologies, the analysis of the use and the effects of telematics (further subdivided into branches) and the analysis of the competition of locations (e.g. teleports) were followed by early stages of networking, of the integration of different economic levels and the globalisation of the effects.

Meanwhile the dramatic structural changes within the telecommunication industry attracted much public attention in Germany. These structural changes included the division and finally privatisation of the then Deutsche Bundespost, the boom in mobile telephoning (mainly on GSM-basis) and the digitalisation (increasingly disseminated through ISDN). That was the breakthrough of new telematics as a service sector in the economy.

The meetings of the team turned out to be a vital platform for the exchange of research findings. After the unification of Germany, Prof. Hottes arranged numerous meetings, e.g. in Bochum and Kronach, to familiarise colleagues from East Germany about the field of the “Geography of Communications”.

Prof. Hottes began to step down in 1994. The IGU commission, now under the chairmanship of Prof. Bakis (Montpellier), awarded Prof. Verlaque and Prof. Hottes with honorary membership of the commission. As a successor of his role within the IGU-commission, I got the opportunity to continue and develop the path-breaking works of Prof. Hottes.

The IGU Commission was confirmed for another four years at the International Geographers Conference 1996 in Den Haag for its impressive works and in view of the growing economic significance of mobile and non-mobile digital communication in the world. Prof. Hottes had arranged a conference on the subject of telecommunications development in the Rhinelands for Den Haag. The

contributions to this conference were published in 1997 in the *Revue Géographique de l'Est* in Nancy.

These works laid the foundation for the Commission of the “Geography of the Information Society” (Seoul 2000). This commission emphasized the social aspects of the telecommunication technology and was under the leadership of Prof. Kellerman (Haifa). The emergence of the “information society”, which does not have a definition yet, signalises that the technical revolution of telematics has already become a complex phenomenon of the society. Karlheinz Hottes acknowledged these broad spectrums in his research and publications more than a decade ago. At a time when globalisation was a term rarely used, Prof. Hottes highlighted the importance of telematics in shaping the role of Singapore and Malaysia in the process of globalisation.

In the late nineteen-eighties, research on the importance of network systems, virtual space and the development towards multi-media communication gained wide recognition. This development has resulted in a wider application of GIS and telematics in geography. Again Prof. Hottes recognised this synergistic effect very early and organized conferences with GIS-experts. As a result, the spring-conference 1998 of the team in Leipzig was held together with the first fair of GIS-appliances and telematics in Germany (GEOBit).

Prof. Hottes attended the discussions during the autumn-conference 2000 of the team in Stuttgart with energy. It is somehow ironic that he suffered from a severe relapse during this meeting from which sadly he did not recover.

Karlheinz Hottes could not see the great success of his own work. At the German Geography Congress in autumn 2001 in Leipzig, there will be for the first time four conferences dealing exclusively with topics of the “Geography of Communication”. His commitment, his fatherly way of dealing with young people especially during the last years of his career, his passion for discussion and his ability to listen will be remembered by all who were lucky enough to have met him. I will always be most grateful for his many suggestions and ideas.

The development and applications of communication technologies are changing rapidly and we are all in one way or the other influenced by them. The number of publications in this scientific field has multiplied quickly, especially in the USA. Nevertheless Karlheinz Hottes' works will still be regarded as a milestone, like discussions on centrality often relates to Walter Christaller. They knew each other well. May be they had a common root in fostering new ideas.

**REFERENCES TO HIS SCIENTIFIC WORK IN TELECOMMUNICATIONS RESEARCH  
(EXTRACT)**

- HOTTES, Karlheinz (1954), *Die zentralen Orte im oberbergischen Kreis*.
- HOTTES, Karlheinz (1987), "The Impact of Telematics on Locations and International Interdependencies Based on the German Banking System". *Bulletin de l'IDATE*, n° 26, p. 171-187.
- HOTTES, Karlheinz, WEBER Egbert; WEBER Hans-Ullrich (Hrsg.) (1986), "Technology and Industrial Change in Europe". *Materialien zur Raumordnung*, Band 32.
- HOTTES, Karlheinz (1989), "The role of modern communication/telematics in the structural Change of the Bochum Region". *NETCOM*, p. 331-354.
- HOTTES, Karlheinz (1991), "The impact of modern Telematics on Singapore, Kuala Lumpur and Georgetown/Butterworth (Penang)", *NETCOM*, p. 330-348.
- HOTTES, Karlheinz (1994), "Modern forms of telecommunication as instruments and supposition for regional development", *European Challenges and Hungarian responses in Regional Policy*. Pécs (Ungarn), p. 485-491.
- HOTTES, Karlheinz (1995), "Entwicklungsförderung durch neue Strukturen und moderne Innovationen in der Telekommunikation". *Neuorientierung der Entwicklungspolitik, Bochumer Schriften zur Entwicklungsforschung und Entwicklungspolitik*, Bd. 34, p. 115-130.
- BAKIS, Henry, HOTTES, Karlheinz, WEBER, Hans-Ullrich (Hrsg.) (1995), "Telecommunications and emerging spatial and economic organisation", *Materialien zur Raumordnung*, Band 47.
- HOTTES, Karlheinz (1997) (ed.), "Télécommunications Rhénanes". *Revue Géographique de l'Est*, n° 4/1997, p. 253-326.

**PROF. DR KARLHEINZ HOTTES (1925-2001) CURRICULUM VITAE**

- |           |   |
|-----------|---|
| 1925      | Born in Cologne.  |
| 1950      | Studies of Economy and Economic Geography.<br>First promotion thesis in Geography: <i>Zentrale Orte im Oberbergischen Land</i>          |
| 1954      | Assistant at the University of Cologne (Prof. Theodor Kraus).<br>Second promotion thesis in Economy.                                    |
| 1954-1955 | Departmental speaker at the "Bundesanstalt für Landeskunde und Raumforschung in Remagen".   |
| 1955-1965 | Chief Executive Officer in a steel-manufacturing enterprise in Southern Germany.<br>Habilitation thesis in Gießen (Prof. Harald Uhlig). |
| 1965-2001 | Chair of Economic Geography at the Ruhr-University Bochum.<br>Established the Institute of Development Research and Development Policy. |
| 1995      | Emeritus.   |

*(Data compiled by Prof. H. Duerr, Ruhr-University Bochum, 2001)*