Bayern Online: A whole State goes online!

by

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Introduction

There are three factors which influence the level of competence in the popular use of telecommunication most - the diffusion ratio of users within the group of total potential users, the level of average knowledge about the technology, and the experience of the users in their daily routine.

The figure displays a causal loop diagram expressing the major factors in the diffusion process of a new telecommunication technology, e.g. the internet. It is significant that there are a lot of reinforcing loops, but only two balancing loops. The speed of the positive diffusion development is strongly slowed down by the unrelievedly high technological progress and several delays.

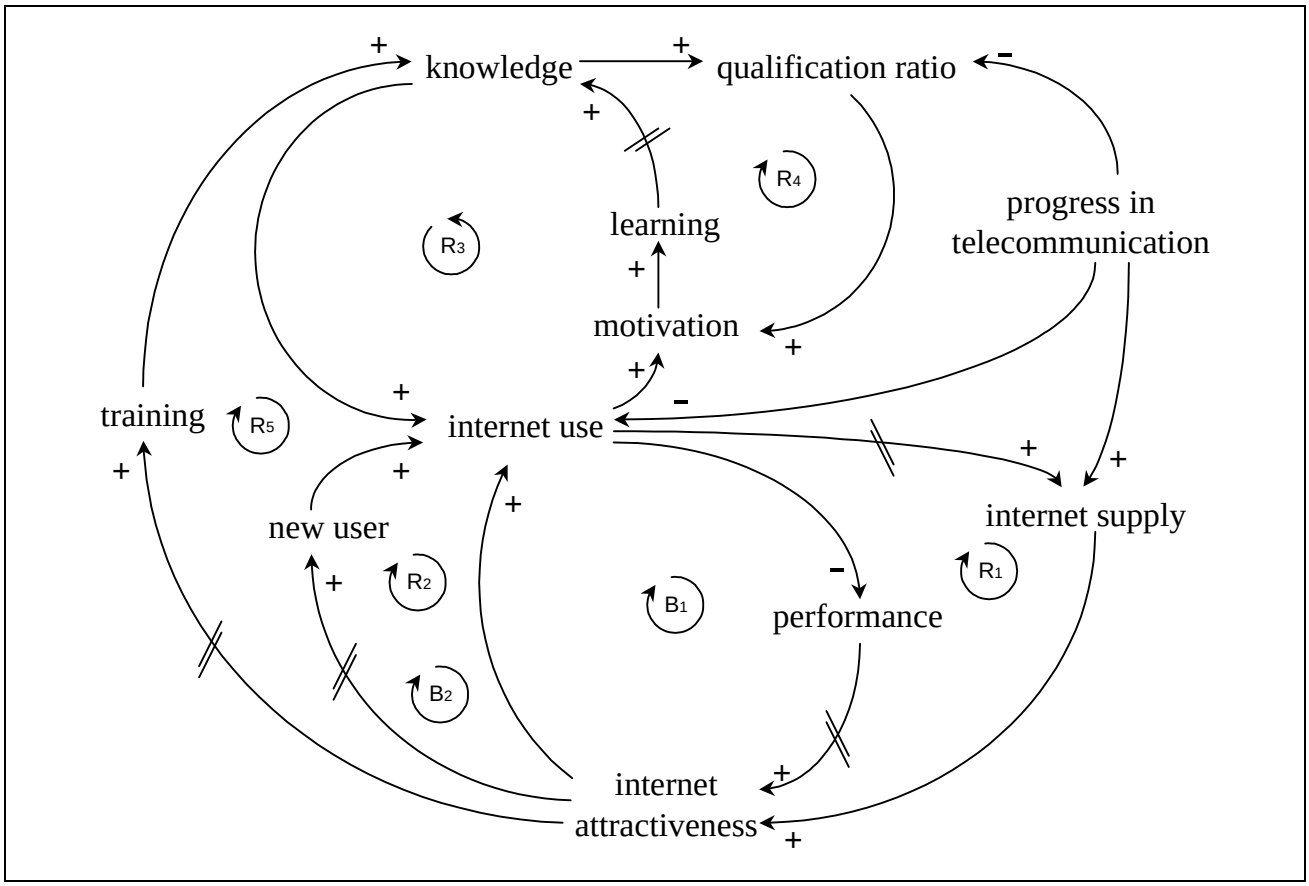

Fig.: The Determinants of the Internet Use

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The R_1 and R_2 loops describe the typical sight on the internet dynamics - an increase in the internet use causes a higher *internet supply* and therefore a higher *internet attractiveness*. This initiates a direct increase of the use and decoys *new users* to start.
The R_3 and R_4 loops represent the individual way of dealing with the dynamic change in requirements. The single user tries to compensate the change with *learning*. His reaction in time is dynamic, too. At the very beginning the user works with a learning policy that differs from the policy he uses at the end of the simulation (Hall 1997, Liedtka et al. 1997, Vromm 1967).
The R_5 loop shows the second way to gain new knowledge - *training*. The incentive to take part in a training session is driven by increases in the *internet supply*. When the new media submits new quantitative and/or qualitative offers the attractiveness to use extra help to improve the personal level of knowledge gets up.

The two balancing loops depend on the interaction of the *internet use* and the *performance* of this usage. Both loops are based on the technical side of telecommunication.

Strategies of External Influence

Within this all options to influence the diffusion speed have the same inherent problem - they operate with strongly delayed variables like the *internet attractiveness* or *knowledge*. To gain advantages against competitors or to shorten the distance to the leading nations in telecommunication use, it is therefore necessary to start with a long-run strategy (BMWi 1997, VDMA and ZVEI 1997, Werle and Lang 1997).
On the one hand the progress in telecommunication biases such a strategy in two ways. First, it increases the requirements to handle the technology continuously by the implementation of new skills and the parallel obsolescence of well-known skills. Second, it complicates the delay handling. On the other hand technological progress itself can not be hold up. Any attempt to isolate itself from this would stand extremely against the underlaying objective to gain advantages in the global competition of locations.

The ‘Bayern Online’ Concept

In 1994 the Bavarian Government started a public financed initiative, called ‘Bayern Online’ (Bayerische Staatskanzlei 1994, 1996). The major objectives are to speed up some of the reinforcing processes and to create a system environment that offers all development possibilities to theses processes. Building up pilot projects for several focuses (e.g. citizen computer clubs and center of competence for teleworking), which are supported directly by existing knowledge and research institutions (e.g. universities), the public access to training units and learning tools is increased enormously (Bayerische Staatskanzlei 1997). A public credit program and an entrepreneurship program for new and/or small firms complete the non-technical side of the governmental initiative. Additional to these points the Bavarian Government invests several hundred millions of Deutsch Marks in new communication networks to improve the general *performance* of the Internet.

Simulation Results

The simulations, based on the real data of Bavaria, start in 1992 and reach their time horizon in 2005 after 676 weeks. We compared two scenarios, first the development without the 'Bayern Online' program and second the development with the 'Bayern Online' program.

The scenario analysis results in two effects of the 'Bayern Online' strategy. First, the improvements in the training and learning processes lead in the long-run to a continuously higher level of *knowledge* and experience in *internet use*. Second, the opening up of new users stabilizes the diffusion process by pushing the *internet supply*.

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