Information, Knowledge and New Economy
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Modern economy is based more and more on knowledge. Terms such as management of knowledge, organisational learning and intelligent organisations are becoming more widespread amongst world leading companies.
Over the past few years, intangible resources, based on the exploitation of ideas, have turned progressively into the real motor behind developed economies, giving place to the so-called the “weightless economies”.

By way of illustration, whilst in the year 1900 only 20 percent of employment was found in the services sector, in 1999 this figure amounted to 70 percent. Meanwhile, the products found on the market incorporate more are more knowledge: computers, cars or drugs which require large amounts of investigation and development, design or customer service before reaching their respective markets.
In other words, knowledge (not work, land or other forms of capital) has become the most important resource in our advanced economies.

The appearance of "knowledge workers" offering their specific competences and learning ability means that, for the first time, companies no longer own their principle productive resource, and this has important consequences in the management of knowledge-intensive companies.

At the same time, knowledge has another characteristic which makes it different from other resources. Knowledge can be repeated over and over without it ever being consumed, something which does not occur with physical goods. Consequently, knowledge is not a limited resource. When an object is sold, the seller renounces its ownership, whilst when an idea or information is sold, the seller continues to possess it and may sell it again and again. This observation, although it may at first seem trivial, has a series of economic consequences which ought to be analysed in detail.

Traditional economic theory assumes that the majority of economic sectors operate with decreasing returns to scale as of a specific volume of production; the unit costs of the products increase and for this reason no company can cover the totality of the market. However, we can currently observe how a growing number of products based on information or knowledge, such as books, films, financial services or web pages, have increasing returns to scale, in other words, a cost structure based on high initial fixed costs and minimum variable costs of the product.

Hence, in those cases in which an information portal is designed or a new drug is launched, companies have to carry out very substantial investments prior to the launch of these products or services onto the market. However, once the first unit of information or knowledge-intensive good has been produced, its reproduction cost is almost nil compared to the initial investment.
For example, the database of a company such as Prous, described in the section of practical cases on this page, has a very high development cost; its subsequent reproduction costs very little, especially as it is distributed over the Internet. Whilst increasing returns to scale are not a new phenomenon, as can be seen in industries considered natural monopolies, such as energy, electricity or railways, it seems that the appearance of the Internet, which brings the virtual elimination of information transmission costs, is helping to increase this phenomenon. In traditional natural monopolies, the returns to scale operated on the supply side: a company with a high volume of manufacture has lower average unit costs than a company with a low volume of manufacture.

On the Internet, a second factor, which affects the demand side (namely, the consumers), comes into effect: the network externalities. For many information or knowledge-intensive products, such as software, films or Internet portals, the value of the same increases in line with the number of people using them. For example, if everybody uses the same word processor, an individual user will perceive the product as more useful than a processor used by a very small number of people.

The success of Windows, Java, mp3, Yahoo! and eBay are due precisely to the high number of people using them. In any case these network externalities are not new. The telephone, radio, fax and television are all examples of technologies invented years ago which are only useful if a sufficiently large number of people own and use them. Finally, we should mention the costs of changeover. The use of a software programme requires an often complicated learning process by the user. Similarly, an Internet user becomes accustomed to the layout of information on a specific web page, whilst a reader appreciates and values the structure and political inclination of a newspaper. This causes the customer to prefer to use a known product instead of trying another one which he then needs get used to.

If we take into account these three factors (increasing returns to scale, network externalities and changeover costs), we can then understand the behaviour of many companies now going online. Once the information has been organised, one must try to sell it without any consideration of capacity limits, since these have disappeared. Moreover, the value of the page tends to increase if there are more people visiting it. And finally, loyalty is key when valuating the changeover costs of current users.