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The Teleservice Goldrush?

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Abstract

There is great uncertainty in the telecom business today as the rules of the game are changing. In addition to technological convergence, the markets also seem to converge into one new digital market of content, services, telecommunication etc. In this new digital market teleservices in general will grow overall, but we can not predict which individual services will grow and how. The providers of teleservices must cope with this uncertainty and develop robust strategies which adapts to anticipated changes. One strategic model is to do trial and error, spin off new autonomous business areas as soon as products seems economically viable and get rid of products that are no longer profitable. In the future environment the product lifetimes will be shorter since most of them are based on software and hence easy to change. On the Internet this is already happening.

Keywords

Teleservices, convergence of technologies, convergence of markets, scenarios, uncertainty.

1 INTRODUCTION

This is not a time of certainty in the telecom business. Few, if anyone, know what the future will look like just five years ahead. In particular, no one knows what the demand will be for the existing services, not to mention the services not yet in existence. The only certainty is that things are changing fast.

We are not primarily interested in the telecom market as this marked probably will merge with other markets like content, entertainment, IT and others. This merged market will here be denoted as the "new digital market". The teleservices in this new environment will by all accounts grow fast. However, the basic problem for all players in this new market is simply that no one knows what it will be like. It is not the same old customers, it is not the same old products and it is not the same old companies. One significant implication of the new digital market is the shift of importance in telecommunications away from transportation of bits towards services and content — the software will dominate.

Planning in such an environment is certainly not easy. To add to the frustration the Internet is becoming more and more important, and if nothing else, because no one planned the Internet, it just grew. The Internet has in spite of its many shortcomings a momentum

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and so much commitment that it in some way or another will transform itself into the, by now famous, information highway. Recent advances in voice and pictures transferred over the Internet also makes it certain that the Internet will influence all planners affected by the new digital marketplace. One very important problem is that it is not certain who will earn money in the new digital market — except from individuals that are experts in software, downsizing telecom operators or making "fancy" pages on the web!

This paper will give no answers to the problems posed, but will look at some of the aspects of the uncertainty and in particular how the industry copes with it.

2 ON PREDICTIONS

Predictions about the future are difficult, and especially so for the telecom business today. Predictions based on extrapolation is certainly fine when things change slowly and no revolution occurs, but the telecom business is about to change in ways which are hard to predict. This is so because the change is no longer generated by the telecom industry itself, but forced upon it by external players such as advanced customers, content providers, the IT industry, etc. No one doubts that the market will grow, but it is the "new digital market" that will grow and not necessarily the old telecom operators. Rules will change, as they have in business after business before.

The historical perspective is that the telephone itself replaced the telegraph. In the beginning the telegraph people ignored the telephone, they fought it but they had to loose. The telephone changed the technological rules.

An industry that experienced great expectations and growth was the automobile manufacturers. According to John Naisbitt there were established 2300 automobile companies in the US, but now only three remain if we do not count a few foreign companies that have entered the US market lately. What happened?

A well known and relevant example of misjudgments regarding markets and demand is the computer industry. The mainframes and minicomputers dominated the market at the beginning of the eighties, but then the PCs and workstations "won" the battle against the mainframes and the rest is history. Why did not Digital, Univac, Prime, IBM, Control Data and many others anticipate this change?

Regarding estimates, the oil industry operating in the North Sea is an interesting case as they failed in their estimates for profitability of oil-fields. They did not anticipate that the oil price would get below $20 a barrel in the mid nineties and did not have any plans what to do if this happened. As they planned the profitability of oil fields with wrong estimates, it is obvious that they had serious problems as the oil price became only half as much as planned. Experiences like this has prompted the use of scenario planning.

Predictions and perceived threats may be wrong or not relevant. The energy crisis, the Cold War and overpopulation were some years ago thought to be the main problems of mankind at the turn of the century. Now it turns out that it might be the environment and drug-resistant microorganisms. However, we have yet to see what actually will happen.

As telecommunication is surrounded by so much optimism it is tempting to suggest that we ask the fundamental questions like; what happens if the telecom corporations gave a party but nobody came or went to someone else's party? Will the new digital market really happen? Is it obvious that the services as such will generate money? Are there other technologies and industries that can offer more than the telecom companies

can today? In order not to commit the same error as the oil companies operating in the North Sea it is probably necessary to ask such questions!

The important questions are however not only "negative"; ten years ago probably no one would guess that we in Norway today would have about one mobile phone per four citizens.

3 ON TRENDS AND DRIVERS

Few, if anyone, doubt that telecommunications in some form will grow. It is however not certain in which form the growth will come, and which companies will make a profit. Which companies will produce the platform on which the next generation teleservices will be run? The small or the big companies? Who will provide the services and content — thousands or millions of small companies that specialize on their sector or large companies/alliances? In order to make better "guestimates" it is important to know what the current trends are and what the drivers of change are. Some relevant trends are:

- A shift on emphasis from transportation towards services and content
- An increasing performance to price ratio of data and telecom equipment
- Increased demand for communication
- Internationalization and globalization
- Fast change, new rules and other values
- Decentralization of industries
- Demand for more mobility
- Demand for more personal services
- Humans are still a limiting factor(!)
- More focus on security

What we will call "drivers" will influence the outcome of the future digital market. The drivers will be highly uncertain as to outcome. Here are suggestions for some drivers:

- Supply and demand for teleservices
- Regulation, liberalization and free competition
- Convergence of technologies
- Convergence of markets

In the following these drivers will be discussed.

3.1 Supply and demand for teleservices

Assuming that the demand will rule the market, the main uncertainty is related to what the customers actually want. Other uncertainties like market growth, technology, competition, products and services are subordinate to this; if the customers want it and the price is right then there is a demand.

What are then services and content all about? It is probably mostly convenience and entertainment — and not much more. The test of a service is whether it is useful and

convenient. If it is not convenient, it will not be used or it will be improved. In this way the market act as a filter, the technology is an option and the market filters away what is not useful and convenient.

However, the convenience of for example a fax machine depends heavily on how many fax machines there are around. The more machines that are around, the more convenience or utility for the users. Of course there is a need for "consumer pioneers" to make the avalanche start, or someone to trigger the demand like giving it all away in the short run and thus creating a demand that will make a profit in the long run! Examples of this are CNN, Netscape and Java.

Transportation of bits is becoming more of a commodity, i.e., a business where one operator cannot be distinguished from another, possibly except for price. Hence the price of pure transportation of bits will eventually reach the marginal cost. In addition, the number of people needed to provide the transportation of bits will due to new technologies decrease dramatically. In order to keep growing or at least keep the staff, the telecom and computer businesses look for other opportunities. If transportation becomes less important, then services and content are alternative sources for revenue and probably also the only way these companies can differentiate themselves from the competitors.

A trend regarding the services is that they get more personalized. Mobile phones are almost as personal as it can get, and today it is probably cheaper to install cellular networks rather than copper wires. Eventually personal smart cards with authentication, electronic payment capability, etc. will emerge as the standard way of doing telecom. UPT is one step in that direction; however the functionality needs to be improved dramatically in order for it to take a market share anywhere near that of cellular phones.

One important service is the "navigator". The navigator ensures the quality of the content and points to relevant information. Just a short time "surfing the net" reveals that most information there is garbage. With too much information around, in the future "garbage filters" might become important services. Already the Yahoo web page (`http://www.yahoo.com`) is a preferred "navigator" page. It would probably evolve much more if they could charge for the service. The same issue is relevant in case a "violence chip" is installed in all TV sets; which companies will code the programs so that they have the right "rating"?

The services seem to emerge in a different way today than what was common earlier. Consortia and *ad-hoc* groups gather to get things done fast. International standards may disappear while *de facto* standards will emerge. A challenge for telecom operators and suppliers will be to join the right consortia and groups; otherwise they may not be there in time to utilize the new technologies. Examples of such groups and consortia are TINA, OMG, DAVIC, MPEG and ATM-Forum.

Two issues are important to mature the services market — payment over the net and security. Just consider the fact that the games industry already is larger than Hollywood and most of that activity can be carried out through telecommunication networks. One final comment related to teleservices is that in addition to the "conventional" teleservices Internet has proved that there is a demand for information or at least enough curiosity to explore cyberspace.

3.2 Regulation, liberalization and free competition

The emergence of a global market where the fittest technology survives in the competition will force most countries to abandon the control they traditionally have had on telecommunications. It is however not an easy path. Problems related to crime on the networks, threats to "national security", protection of national industry, protection of government income, etc. will all pose rationale for government regulations and limitations to free trade.

It is however clear that many governments today want strong competition in order to bring down the price of telecom. Telecom is a core asset for an industrial country and the nations competitiveness in the global market relies more and more on efficient communications. Another aspect of the competition that governments might want to regulate is the "market power" for companies or alliances. To much power can be bad for the competition, so the government might want to stop to much concentration of power.

It might even be required that the different roles have to be isolated in different companies in order to operate in some countries. One division of the roles in telecom is:

- Operator of long distance trunk lines
- Operator of local and access lines
- Service producers
- Integrators
- Content providers
- Market channels

One obvious problem for regulators is to decide who is what in regard to roles. When an Internet provider set up links to relevant content pages on the Web, is that just a service or is it also content? Blurred lines between roles seem to become more common. One interesting role in relation to regulation is the "integrator". If the regulator does not want too much power — that is too many roles — within one company then an integrator might be needed to integrate content, services and infrastructure into an actual product. We assume that without regulations many companies in the emerging new digital market will try to be integrators.

Anyway, the problems of regulation, liberalization and free competition result in many questions and much uncertainty.

3.3 Convergence of technologies

Today the TV set, the telephone and the PC are separate boxes. They will probably grow more and more together. As harddisks in the computer get the capacity to store one or more video films, it is good reason to "connect" the PC and the TV, and as the telephone so easily can be connected to the PC, the PC at home might soon also act as a telephone. Mobile and fixed telephones are merging and to make it complete it is not impossible within a few years to have combined handsets with DECT, GSM and satellite phone to provide global, seamless mobility.

Packet switching has in the Internet world proved its value and will probably replace much of the present line switching technology, but not completely. The technologies running the Internet is in philosophy very different from the technologies running the tele-

phone networks. It is however assumed that the networks will eventually converge. One interesting result of this is the problem of latency in the Internet. For professional users with more money than time the response time on the Internet is unacceptable. One possibility is to have different backbones for different user groups. Another is to have different priorities according to "tags" following each packet at the network. The net has some obvious bottlenecks. Some people will not accept this and will of course be willing to pay for better services. Others have more time than money and can wait. It is in this context not surprising that the proposed Version 6 of the Internet Protocol has such tag capabilities that will enable prioritized services. Internet or Internet-like applications may even create an increased demand for ATM and thus ensure the success for this technology. However, Internet will probably have the same property as the modern PC; new software applications will always emerge that make the capacity of the hardware too limited. Just consider what "real-time" games with live video on the net will demand of capacity!

Telephone exchanges were originally mechanical switches. Now they more and more resemble computers. The software complexity in a modern telephone network is also increasing dramatically — so much that some dramatic change in the way they are made is to be expected (the mainframe computers also had an exponential growth of complexity before their market collapsed). Presently it is not an easy task to implement new services on the existing exchanges. However, more modular and programmable components of the networks and distributed platforms will make life easier for the people that provide the new services. For the teleservice producers one of the most interesting questions related to the technological convergence is which type of platform will execute next generation of services. Do they resemble the telecom exchanges or do they resemble computers?

3.4 Convergence of markets

Content providers view the new digital market both as a threat and an opportunity — but for them the telecommunication part is just a tool, not the goal, and will probably act to have their share of the new digital market. The service providers try to make alliances with both the content providers and the "transport" companies to provide an integrated product. The traditional "transport" business has of course interest in providing as much service as possible themselves and also to get into the content business with or without alliances. The different players have however very different ideas of what teleservices should be. One significant result of the converging markets is that the rules of telecom, newspapers, banks, financial institutions, service providers etc. does not apply anymore. New rules have to establish themselves over time, but it is as yet unclear what the new digital market will be like and, especially so which are the rules? To stress the idea Newsweek recently posed a picture of Rupert Murdock at the front page with the title "The man who changed the rules".

4 OUT OF CONTROL

One factor that worries many politicians and strategic planners is the fact that it seems that no one is in control anymore. If nothing else, the Internet is an example of a system out of control and still working! Nobody planned the Internet, it just grew. This will probably become the model for how a system can and perhaps should evolve.

For the traditional players like the telecom operators and equipment manufacturers, the new rules are not fun at all. It is becoming clear that the revenue might disappear within few years due to competition, new technology and changing demand for services. Everybody has learned the lesson of IBM, GM and other industry "dinosaurs" that were overtaken by aggressive newcomers that were able to change the rules. The regulators even want the competition to be fierce to force the prices down.

It is however one thing that is certain these days, and that is that the companies reorganize and reorganize. A joke from my own company is that the organizational charts do not only have dates any more — but also the time of day!

So what do the companies do? Right now it is not clear what the market will be like, which products will sell and how the competition will evolve. Other industries have already been through some kind of similar evolution, e.g. the computer industry and the automobile industry mentioned above. One significant difference is that they knew which market they were in. Computer manufacturers were going to sell computers — but maybe not mainframes. The automobile industry had to cut cost to compete — but still sell cars. However, the telecom industry might not even know which business they are in — services, transactions, transportation, entertainment, billing, convenience or fashion?

In order to cope with the uncertainty of technology and demand, few companies will try to "put all their eggs in one future". In the face of uncertainty they rather split up, create smaller teams, do reengineering, do networking, downsizing, outsourcing, etc. The consultancy businesses in organization change are probably the winners anyway.

What is it they want to achieve? Above all to reduce risk and make each small group manageable and aware of which business they are in. It is probably impossible to run large, monolithic, businesses now, so why not go to the extreme and let the small groups run themselves like autonomous units. Like the Internet! Like networks! Optimize at the fringes! The Internet has just a few rules and they are basically called TCP/IP. On top of that everyone can do almost anything — and they do. So the market is out of control and the companies also get more or less out of control — only governed by very simple rules and above all a network to make communication possible.

Asset number one for most companies seems to be people and their abilities to create new ideas. Does creativity work in large, centralized corporations? The answer most people come to these days is no — and they reorganize to let the bright ideas flow more easily within the organization.

5 ON TELESERVICES

What are the consequences for the teleservices? First and foremost that no one knows which services will be in demand within five years. Second that the market they will serve is not yet defined — it remains to be identified. How can the service providers cope with such a situation? Probably the same way as other companies within the "new digital market" — by trying many different routes, succeeding here, loosing there, and above all be flexible. One major problem is the complexity and size of the companies needed to run global teleservices. If they are small, that will indeed create business opportunities for many other companies that supply additional services. If they are large, other options for global cooperation emerge and such large companies must always approach many possibilities simultaneously. In many ways this is also the centralization versus de-

centralization problem — what is the competitive advantage of a big company relative to a small company in the new digital market?

6 CONCLUSION

It is a time of great uncertainty in the telecom business, but it is also a time of many possibilities. The new digital market will eventually come, no doubt about that, but the question is how and when. When there is little certainty about what the market will be like, do not "put all eggs in one future" — go for many futures and a portfolio of products: some will win, some will loose. However, make sure that the sum of losses and gains is positive!

7 BIOGRAPHY

Born in Norway -61. Received a Ph.D. in computer science in -93 from the University of Bergen, Norway. The title of the dissertation was "Stochastic optimization and parallel processing". Started in Telenor R&D in -93. Presently work on strategic issues, scenario planning and making decisions under uncertainty.