Winter 12-5-2004

Economies of Information Consumer Commodities – An Introduction to Conceptualising Forms of Information Capitalism by Two Cases

Jussi Okkonen

Pasi Virtanen

Economies of Information Consumer Commodities – An Introduction to Conceptualising Forms of Information Capitalism by Two Cases

Jussi Okkonen, Pasi Virtanen

Institute of Business Information Management, Tampere University of Technology, Finland

ABSTRACT

Change from tangible and place bound production to more flexible production of intangible information goods has challenged traditional ways of organising production. Innovative operating models have brought up also new logics of doing business, therefore one might suggest that it is not always clear which is the cause and which is the effect. The attention on general discussion is often on the nature of the product, yet at least as interesting is the meta-level, i.e. how the value is created.

The aim of the paper is to examine different operating models, i.e. ways to define operating environment. The focus is on the different models of competitiveness or how end-users are served and functionality of media service is maintained. The paper contributes to discussion on sufficient and sound ways to organise knowledge intensive value creating activities. Reflections to practice are made by examining two cases of content provisioning in digital media.

***Keywords*:** business model, content provisioning, informationalism

1. THE CONCEPT OF INFORMATION CAPITALISM

Social and economic changes in recent decades have shifted society from industrialism to post-industrialism and now to one based on systems of information and communications. This has affected all economical entities, including people, organisations, and technologies. It has had an impact on actors at both the local and global levels. This last progression is referred as one of informationalism, where the importance of information creation and transmission is accepted as critically important to all that society represents. It does not mean that economies would no longer break down in any physical sense, nor be able to break away from physical restraints, but it does mean that these traditional limitations would be modified by growth in information and knowledge

Castells (1996) emphasises the importance of different networks for informationalism. He argued that it is essential to have a medium for seeking, exploring and researching, thus modern economic structure is dependent on information networks. He (ibid., 61) defines a new paradigm for an information-based society. In information society the information is raw material as technologies act on information not only vice versa. New technologies have pervasive effects because information is an integral part of human activity and all processes of individual or collective existence are directly shaped by the new technologies. Networking logic of any system or a set of relationships using new technologies as the morphology of the network is adapted to increasing complexity of interaction and to unpredictable patterns of development arising from the creative power of such interaction.

The role of information as a commodity and a means of production is indisputable, yet the nature of value creation process requires closer examination. Change from tangible and place bound production to more flexible production of intangible information goods has challenged traditional ways of organising production. Innovative operating models have brought up also new logics of doing business, therefore one might suggest that it is not always clear which is the cause and which is the effect. The attention on general discussion is often on the nature of the product, yet at least as interesting is the meta-level, i.e. how the value is created. In this paper the value creation is approached from traditional, say Marxist, perspective. The aim is to point out that in the production of intangible commodities the rules of tangible production do not necessarily apply. In addition to that the cases employed herein are used for the discussion of the issue of value creation in more specific.

Taking focus back to two classics of economics Smith and Marx, the emphasis was on the organisation, division of labour and ownership of capital and labour (Smith 2001, Marx 1979). The situation is still the same, the contemporary production is tied to those three relationships, but their nature is changed. The same rules or laws apply, yet there are new extensions to be considered. The main point is that for information commodities there is a very large difference between marginal cost of the first unit and the second. According to Shapiro and Varian (1999) information is expensive to produce, but very inexpensive to reproduce. That point is the first conflict between traditional economics and informationalism. Large fixed costs and low variable costs patronise centralised production and economies to scale. On the other hand technology enables production and reproduction of

inexpensive information commodities that have high surplus value to end-users.
Bischoff (2003, 33-34) points out that information technology plays significant role in value creating process in all sectors of economic and social reality. The production itself is flexible, as content (production) and distribution (reproduction) are no longer simultaneous. Moreover, technology serves as an instrument of gaining economies to scale.

Garnham (2003, 49-50) challenges the idea of increased productivity by shifting to intangible products and to using information technology. However, there is a long tradition in discussion of how the value is actually created. Notions of arbitrary value emergence (cf. value creation) can be considered false, as even voluntary participation creates both economical and social value.

By definition information capitalism refers to system where technology and intangible assets, i.e. knowledge and competencies, are used in production of information commodities. In this paper those systems can be business-to-business or business-to-consumer production systems. It is important to notice the difference between traditional systems, e.g. service provisioning and information commodity. The following section takes closer look at two different value-adding processes.

In this paper the cases are aimed to start discussion of modern information capitalism. The first case is value chain where very expensive data-set is distributed for free via Internet. The revenue logic of such activity is reverse. Consumers are offered a surplus service for free if they are willing to use the primary service, which in this case are classified advertisements in the Internet. The second case is also a value chain of public communication. In television chat the activity itself has value as entertainment, i.e. social value. The revenue logic is also similar to that with ASP (application service provider), as service provider only offers medium to customers. The customers create the content and decide how the show goes on.

2. CASE DIGITAL MAP SERVICE

ASP-model refers to business model where information system's fundamental services are fully or partly outsourced. E.g., Krajewski (2001) states that application service providers offer access to software applications and services over the Internet, virtual private networks or leased lines, and describes the phenomenon with phrases "application outsourcing", "hosted applications" and "webifying applications". In their study on software business models, Rajala et al. (2001) distinguish the following subtypes of new service providers, that the so called "Service Provisioning Shift" has recently brought into the software market: Application Services Providers (ASP), Hosting Services Providers (HSP), Communication Services providers (usually ISP's, Internet SP's), and also content providers (e.g., CSP's) are mentioned. They form a variety of partner networks and cooperation opportunities for software vendors, and typically these companies provide hosting services for other companies in an outsourcing agreement.

Servicing and implementation model is regarded as one element of a conceptual software business model (e.g., McHugh, 1999, Rajala et. al., 2001), while the others are product development, revenue logic, sales channel and sales approach (Rajala et. al., 2001). Software implementation requires some kind of servicing, either self-service or on-site delivery. Thus it is essential to make difference between regular maintenance activities and servicing. Maintenance is a part of daily activities and based on the requirements of any system, e.g. in ASP model maintenance is mostly outsourced and customer is responsible only for the access to the Internet. Moreover, installing and configuring a system for accessing to service provided should be called servicing.

Krajewski (2001) points out three obvious benefits of the model. Firstly, savings in personnel costs, secondly, savings in other costs and, thirdly increased competitive advantage. Savings in personnel costs come mainly from the need for less support personnel as service provider maintains the system. Savings in other costs are based on the earnings logic of ASP. If service provider charges customer by transaction ASP model is always more cost-effective to some point. On the other hand, if provider charges lump sum from the customers the economies of scale ensure lower price for individual customer. Competitive advantage is perceived through up-to-date hardware and software, competent support personnel and better focus on core functions. Actually ASP is decision of make or buy, which benefits mostly small and mid-size enterprises (Raisinghani and Kwiatkowski 2001).

If ASP is examined over the life span of the system there are three main benefits. Firstly, there is no need for specific system as access to Internet provides necessary services to customers. ASP model frees also from spatial restraints, as services are available in Internet. Secondly, maintenance is outsourced, thus the risk of additional maintenance and updating are minimised. And thirdly, the system is somewhat more flexible when it is time to discard it. Thus, as it is based on contract for e.g. certain period the cost are only semi-fixed. If the hardware and software were own the costs were more fixed.

The risks of ASP are raised from the same origin as the benefits. ASP model makes customer dependent on the provider, which is an invisible relationship when everything works but if the system fails there is not much to do. Remoteness makes systems vulnerable as

even temporal breaks e.g., in Internet connection make it unavailable. If the system is provided by several ASPs the difficulties in compatibility between the components decrease usability. Especially if the supply chain is long and consists of several individually produced components, the system is sensitive to disruption. If ASP model is applied to support core functions, it is essential to maintain functionality during breaks. The difficulty of such dependability is due to that, that the ASP, also the backup system, is more or less virtual.

2.1. Oikotie – shortcut to required information

Genimap Corporation [1] is innovatively developing location-based services for the Internet and mobile information society and applies ASP for digital map services. In this paper we examine a web map service that is integrated into a media portal. The portal is called Oikotie (Finnish for 'shortcut') and it is part of Helsingin Sanomat, the biggest newspaper in Finland (www.oikotie.fi). This kind of service can be considered as an Internet extension to a printed newspaper. The Oikotie-service sells media space, i.e. space for classified advertisements to companies and private individuals. The media space is also advertisement space for companies on the site. Owned by SanomaWSOY, the publisher of Helsingin Sanomat, Oikotie contains advertisements printed in Helsingin Sanomat, and moreover advertisements in several local newspapers as well.

Oikotie contains three categories of advertisements: *apartments*, *motor vehicles* and *vacancies*. Oikotie's revenue logic is straightforward: companies and private advertisers pay for the advertisement, and the service is free of charge for the end-users looking for information. The advertisement in Oikotie may contain more detailed information compared to the newspaper ad, and include e.g. photos and links. Therefore it truly extends the advertisements on the printed newspaper. The map service is value-added service for the end-users; hence it provides usable information on the location of advertised item. For example, if the advertised item is a pre-owned car, the end-user can view a map to locate the advertiser and find a route to the destination. Moreover, if the item is a home or a job, end-user gets information about the surroundings and nearby services as well. Oikotie thus increases the information on the commodity by adding POI's[2] to the map and giving for example bus routes and timetables to the site.

ASP is a fairly new business model for map content providers. It offers several advantages for both the provider and the customer. The benefits from ASP concern especially the management and cost of map service. In traditional operating model the customer was responsible of establishing a map information system, purchasing the datasets, running and administering the system and having maps updated. ASP model has several benefits e.g. economical, technical and those linked to the quality of map content. Firstly, economical benefits are gained from revenue logic of ASP. As the map service is not the customer's core service, yet it is important part of the service, Oikotie wants to focus on the business of their own i.e. selling advertisements and media space. The ASP model enables lower costs in the phase of evolving business. The reason is twofold as the capacity exceeds the use. The surplus capacity is free for other purposes for ASP and similar service can be duplicated for other customers. Secondly, technical benefits are gained from operating model of ASP. ASP model decreases maintenance costs as technology is dispersed over the value chain. Also the investments and re-investments are allocated over the network, thus need for capital, technical expertise and technological risk are dispersed more evenly. As map service provider has outsourced hosting and other support activities, it is supposed that the resource allocation is optimal. And thirdly, ASP model enables the access to most up-to-date map data, as content provider network is responsible for updating it. However, it still depends on the cycle of updates how up-to-date the maps are.

The value chain of Oikotie consists of three layers, which we call the component provider layer, the ASP layer and the front-end layer. The component provider layer contains software providers and content providers. As the map service provider integrates both the content from different sources into one service, and the information system using software components from different vendors.

The ASP-layer is a middle-layer that enables the use of map service to customers. ASP-layer contains map service by Genimap, hosting service, i.e. the physical place for database server with 24-7[3] secured service, and communication service, i.e. channel to access data. Genimap concentrates on the development and maintenance of map services, other services on the ASP-layer are outsourced. The customer's portals are placed on the front-end layer that is accessible for the advertisers and end-users. It consists of different portals, which are connected by some common content. For example, the Finnish real estate agent Huoneistokeskus advertises in Oikotie, but most of the content is in its own portal. All of the front-end providers are not linked, but they all utilize map service provided by Genimap.

[1] See Okkonen, J. & Salo-Merta, L. 2002 for more detailed discussion on ASP model in digital map services

[2] POI=point of interest

[3] 24-7=24 hours a day, seven days a week

3. APPLICATIONS UTILISING MOBILE COMMUNICATIONS – CASE TV-CHAT IN FINLAND

By now there are numerous entertainment applications that are used via mobile communication devices. Mobile communication devices can be interpreted in most cases as mobile telephones, but also communicators. On market there are games to be played in mobile phones, games to be downloaded from various web sites to the mobile phones and even games that can be played by using mobile phones as interfaces and television screen and program as display. One perhaps more communicative new way of doing business is to use television and mobile phone in interaction. In this sector there are at least two types of applications in use in Finland. Firstly there is the TV-chat, which is introduced more closely in this paper and secondly the game sector.

By now at least every Finn has probably seen these short messages that are seen on TV-screens, called chats or chat boxes. The phrase is also adapted to Finnish everyday language "chatti" from the English *to chat*. The action itself is quite straightforward. One sends a SMS-message[4] to a channel specified number and the sent messages are then aired in almost real time. The phrase "almost real time" is used, because the difference between the more quiet moments (=less TV-viewers and thus less *chatters*) and the busy rush hour can be several minutes.

As the product was new, one might have wondered what is was all about. After a short, closer look at things, it may be stated that a new entertainment for the youth and a lucrative moneymaker for the TV-channels was born. Lucrativeness is constituted by the fact that the content of this service is provided by the users themselves, the service provider, TV-channel, only offers the possibility to do this against a fee and airs the messages.

TV-chat is real time communication between two or more persons through mobile phones, computers and the Internet. *The chat area* is like a virtual town square to which people gather together to discuss with each other. The communication is primarily made by typing notes to one another with and through the mentioned tools (mobile phones, computers). To enable *the chat* also a server is needed. The chat service is located at the server on the service providers' premises and this server then upholds the *chat area*. (Vuorinen & Hendrell 2003)

There is a control or a controller on behalf of the service provider to monitor the SMS-messages and that the messages follow the given, sometimes unwritten rules. The rules include among others following: no contact information is to be shown, no abusive or offensive messages are aired whether it is about gender or race. The TV-companies are bound by the Finnish law and general ethics. The messages may be edited, shortened or not aired at all, depending how the controller sees fit. Mainly the messages are displayed as they were written so they are not corrected concerning their writing.

The chat services differ from one another to some extent. At some TV-channels the controller takes part in chat conversation and comments on the messages. Also some channels display live footage taken by a web cam of the controller simultaneously on the rim of the screen. It seems that the controllers have become sort of celebrities themselves and that some of them are more popular than others.

TV-chat started in the Internet and its model is a Finnish originated IRC (Internet Relay Chat), which enables web-users' multiple conversations on different channels (Note the difference in Finnish terminology to chat and to irc, *chätätä* and *irkata*). IRC was developed in Finland in the summer of 1988 by Jarkko Oikarinen of the University of Oulu.

Chat found its way to the television through the text-television. For example during the fall 2002 Finnish TV-broadcaster MTV3 had five text-TV pages through which the messages could be sent 24 hours a day. All of these pages are controlled like the TV-chats (Kivimäki & Saarinen 2001). The main difference between a text-TV-chat and a TV-chat is that one can send contact information through the text-TV-chat and that the control does not comment on the messages. Of these two the TV-chat is more popular in Finland (Kangaspunta & Huusko 2002). Sometimes the two are used in connection with each other.

First to start with this hype-to-be was a TV-channel called TVTV! (which changed its name in autumn 2001 to SubTV) in June 2000 (Kuorilehto 2003). Now the chat-service is provided by major commercial TV-channels such as MTV3, TV4 and also TV Tampere and SportChannel. At the beginning the service was just meant to fill the odd hours of the night when there was no program on. As the whole concept grew more popular, the services spread to other hours of the day. Now they are offered also in the mornings and in the afternoons, summing up to multiple tens of hours each week. First night the MTV3 had their TV-chat service, they received thousands of messages almost blocking the service. In the morning when the service was about to close there was a queu of hundreds of messages still to be displayed (Ryöti 2003). It was mainly the youth who sent each other greetings, "philosophical" notes and quotations and seemingly irrational comments such as "Tappara rulez" (Finnish ice-hockey team). Today the services display a "no-more-messages" notice,

[4] SMS=short message service in mobile telephoning context

when their air-time threatens to end before all the messages can be displayed (Ryöti 2003).

The sending of messages is possible at least for the subscribers of teleoperators DNA, Radiolinja, Sonera and Telia. Price of a message to a chat service varies a little. It generally is 0,84 euros (MTV3 chat, 28.10.2003) another source declares that for Radiolinja subscribers the prices are 0,59 euros for the SMS-messages (the "normal" text message) and 1,00 euros for the MMS-messages[5] (TTV 02.11.2003).

3.1. The technical side of the chat services

The chat begins with a normal SMS-message from one's own phone to a given number. These chat-numbers are TV-channel specific and they differ from the "ordinary" telephone numbers significantly (for example 173222 instead of 040-5556789), so there is little or no risk of accidentally calling these numbers. The messages are directed from one's "own" tele-operator to central for the SMS-messages and further to a third party, another service provider, which claims to be a value-added service for communication networks. One such service is INA Finland Oy in Tampere (Hynnä 2003).

A server hosted by the third party service provider then 'chops up' the message and separates from it the information not needed or wanted for the chat purpose. Contact information of the sender is this kind of information among other things. After this chopping up the message is then sent to the TV-chat service provider, to TV-channel, there it ends up at the computer of the chat controller. In this stage the chat controller can edit, comment or remove the message as shown earlier. Finally the chat controller approves the message, which is the most common case. (Hynnä 2003)

The approval sends the message back as "raw text" to the third party service provider again. There it goes onto another server, where the message is converted to a form in which it can be sent on air. The conversion is actually already done, in this stage a previously created alias can be added to the message or a specific colour or some other chosen options and parameters. After these procedures the message then returns for the final time to the TV-channel to a so called "air-server", which actually is a web-based screen that only sends the message on air. At this final stage no alterations are possible. (Hynnä 2003)

Previous systems were not so, at least seemingly, complicated. However, practice has shown the supremacy of these newer systems. They are better and easier to maintain and uphold, because each machine does only one part of the whole. The system is easier altered and programmed, for example creation of aliases. Also in case of problems the damages can be bound not to whole system but to a more controllable part of it. (Hynnä 2003)

The provider of the actual chat service must have adequate communication channels. However this presents a lesser problem because the text messages present a rather small burden to the net connection. In the interviewed company the connection was a 2 Mb's (megabit's, millions of bits per second) connection to prevent any possible collisions, which is to make sure. This was said to be far more than adequate. They also had an automated service which checks the new messages twice a second. This stage of automatisation and these connections result in for a sent message to be shown on the chat controller's screen in five seconds from sending it and in another five to be aired. These numbers depend somewhat on the fact how quick the chat controller is to accept the message, how busy the networks are and how many messages are sent simultaneously. (Hynnä 2003)

Finally, one interesting fact related to this activity is that according to the Finnish law, all messages must be kept for a certain period of time. As time goes by the storage capacity of the chat service provider must also be considerable. This is yet another question for the TV-chat provider to answer, but this area is marked out in this paper.

4. CONCLUSIONS

Comparing the two cases some contradictory notions can be pointed out. The most important notion on digital business is, that content is often costly to create but inexpensive to reproduce. That is the fact along the maps, but untrue with the TV-chat (cf. Shapiro and Varian 1999, 21-22). In fact there is a brilliant revenue logic on idea that customers pay for the joy of providing media content. It seems that in both cases the revenue logic is bound around information content, but the relationship between the "true" content and surplus service is blurred. In the map-case the once produced material is sold over and over again whereas in the chat-case the content is actually not sold at all.

In the case of TV-chat the idea is that people entertain themselves by public communication. The platform that enables such activity is domain or service provider not the content. Such operating model is the most inexpensive one, yet it is still productive. Taking TV-chat as an example of production, there is fuzziness about the mutual relationships in the value chain. The beginning of the value chain is clear. There is hardware and software that the systems consist of, but when the content is added the fuzziness appears. The show, the TV-chat in itself, is co-operation between viewers/chatters and the controller. It might be claimed

[5] MMS=multimedia message service in mobile telephoning context

that people are willing to pay relatively high fee for participation. The actual media content is free for all those who possess a television set.
TV-chat can be considered a sort of exception that confirms the rules, but still it raises interesting questions on relationships in production. For the chat service there is logical explanation on people's willingness to have their time on TV. As the mobile phone penetration in Finland is close to 90 % (Digitoday 2003) and there are some 3,6 million TV-receivers in the country there is bound to be people willing to take part in this. However the publicity in that forum is still very limited. Other notion is that people do not pay for viewing the chat messages, but posting them.

In the case of digital maps the explanation for such model is that as the data-sets already exist and there is a lucrative way to use them for minimum marginal cost, the operating model is ready. Moreover, if digital maps were only content in the service there might be fee for using them. There are several other examples of such operating models where people get something free of charge, but according to famous tag by Milton Friedman "there is no such thing as a free lunch".

These two cases point out that if there is possibility to produce and reproduce information with low costs, the information can be used as an independent service or a surplus service. The revenue does not necessarily come straight from the service, more likely from other sources. Information can, and will, be used in different combinations, thus the information goods are often complex combinations and layers of information and knowledge. What seems to be clear at the first sight, can be very complicated at the second.

REFERENCES

[1] Bischoff, J. (2003) Moderni kapitalismi ja informaatioteknologia pp. 31-39 in Heiskanen, J and Mäntylä, J. (eds.) (2003) MarxIT – Informaation kapitalismin kriittistä tarkastelua. Karl Marx-seura ry, Helsinki

[2] Castells, M. (1996) The Infomation Age. Economy, Society and Culture. Volume I: The Rise of The Network Society. Oxford, Blackewell

[3] Digitoday, 2003. Yhä useampi vain matkapuhelimen varassa.

[4] http://www.digitoday.fi/showPage.php?page_id=12&news_id=3115. Read 10.08.2004

[5] Garnham, N. (2003) Tietoyhteiskunta: Teoriaa vai ideologiaa? Kriittinen näkökulma teknologiaan, koulutukseeen ja työllisyyteeen informaation aikakaudella pp. 41-57 in Heiskanen, J. and Mäntylä, J. (eds.) (2003) MarxIT – Informaation kapitalismin kriittistä tarkastelua. Karl Marx-seura ry, Helsinki

[6] Heiskanen, J. and Mäntylä, J. (eds.) (2003) MarxIT – Informaation kapitalismin kriittistä tarkastelua. Karl Marx-seura ry, Helsinki

[7] Hynnä J., Director TV Tampere. Interview 03.11.2003.

[8] IRC.org. www.irc.org/history_docs/jarkko.html, 05.11.2003

[9] Kangaspunta, S., Huusko, M. 2002. Yksisuuntaista odottelua, Terveyden ja hyvinvoinnin yhteisötelevisio –tutkimusprojektin väliraportti II Tammikuu 2002. http://www.uta.fi/jourtutkimus/20402raportti2.pdf, 29.10.2003

[10] Kivimäki A., Saarinen J. 2001. Televisiochatit: Äärimmäistä ajanhukkaa vai alku jollekin suurelle? Tiedotustutkimus 3/2001.

[11] Krajewski, K. 2001. What's Up with ASPs? Association Management, May 2001

[12] Kuorilehto, M. 2003. Chat-kielen piirteistä. Kielikuvia 1/2003. http://www.uta.fi/jarjestot/nsseura/kielikuvia/kielikuvia-1-03.pdf, 29.10.2003

[13] Marx, K. (1979) Pääoma, Osa 1: Pääoman tuotantoprosessi. Kustannusliike Progress, Neuvostoliitto

[14] McHugh, P. 1999. Making it big in software. Professional Book Suppliers. Oxford, England

[15] Okkonen, J. & Salo-Merta, L .(2002) Digital Maps Go ASP - Application Service Provider Model Applied to Digital Map Services. Europrix 2002 Tampere 14.-16.2002

[16] Raisinghani, M. and Kwiatkowski, M. 2001. The Future of Application Service Providers. Information Strategy, summer 2001.

[17] Rajala, R., Rossi, M., Tuunainen, V. K., Korri, S. 2001. Software Business Models, A Framework for Analyzing Software Industry. Technology Review 108/2001. TEKES.

[18] Ryöti M., Planning Manager, MTV3. Interview 06.11.2003.

[19] Shapiro, C and Varian H. R. (1999) Information Rules. A strategic guide to the network economy. Harvard Business School Press, Boston

[20] mith, A. (2001) Of the Division of Labour. pp. 37-41 in Shafritz, J. M. and Ott, J. S. (eds.) (2001) Classics of Organization Theory, 5th edition. Wadsworth Group, Belmont.

[21] UKES, 2002. Televisiot tulipalojen aiheuttajina. TUKES turvatekniikan keskus. http://www.tukes.fi/sahko_ja_hissit/esitteet_ja_oppaat/TV_palo_suomi_5_02.pdf. Read 10.08.2004

[22] Vuorinen, V., Hendrell, H. 2003. Chatmaailma.com, chat-tutkimus. http://www.chatmaailma.com/chat/abc/perustiedot.php, 29.10.2003.