

Strategy Options of Companies for Participating in Standardisation Processes in the Context of Digital Convergence

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by

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Content

- I. Introduction
- II. The Role of Standards in the Context of Digital Convergence
- III. Cross-Industry Standardisation Efforts
- IV. Strategic Approaches of Companies Towards Standardisation
 - A. Widespread Participation in Standardisation Processes
 - B. Focussed Alliance-Building
 - C. Wait-And-See Approach
- V. Case Examples: Digital TV Platforms Integrating New Services
 - A. Java-based Platforms
 - B. Proprietary Platforms
 - C. Manifestation of Wait-And-See Strategies
- VI. Conclusion
- VII. References

Abstract

The common utilisation of digital techniques for various kinds of information and communication services may lead to the emergence of integrated media platforms. However, the different sectors of the information and communication industries are based on heterogeneous technical concepts. Active cross-industry co-operation is needed to materially implement a convergence process. In this context, standards can play an important role. It is however not clear yet how companies will approach the challenges associated with this process. On the one hand, they can actively participate in standardisation activities.

This allows them to closely follow or even influence technical developments, but might dilute management attention and distract from other, market-driven developments. Alternatively, they can focus on proprietary solutions and try to build 'private' alliances. Promising huge rewards in case of success, this approach has to expect fierce competition from vigilant competitors. Finally, a wait-and-see approach would cause the least resource constraints, but also carries the risk of losing track of the development. Case examples show companies which have chosen to compete on the basis of one of these presented options.

I. INTRODUCTION

The clear-cut boundaries of various kinds of information and communication services such as broadcasting, telecommunications, or online computing are increasingly becoming blurred. Based on the common utilisation of digital techniques, a convergence process between various industries has been postulated and has shown an increasing number of practical manifestations recently. However, the technological and economic concept of digital convergence is still rather vague and interpretations of the term differ considerably [1]. But as potentially fundamental economic transformations are being associated with this development, there is a considerable demand for systematic analysis of the driving forces and potential implications of digital convergence.

A possible result of digital convergence is the emergence of unified information and communication platforms based on the utilisation of (one or more) broadband delivery systems. In a completely digitised world, theoretically, any network will be able to carry any type of media being used for any kind of service or application [2, p. 2]. This technical integration of platforms allows content, service and technology providers to take away business from companies which are serving the same sector of the value chain, but have operated in a formerly separated business area. For example, cable operators are beginning to offer Internet access services, therefore cannibalising the business of ‘traditional’ ISPs. On the other hand, companies from different industry areas can form new alliances and cross the borders of existing value chains [3, p. 197]. This is the reason for claims of an eventual blurring or even vanishing of boundaries between a range of industries,

most importantly the media, the telecommunications, and the computing sector. Manifestations of this belief can be found in the recent intensive cross-industry merger and acquisition activities.

However, the broadcasting sector, the computing and online world, and the telecommunications industry all have a very distinct legacy in terms of technical, regulatory, and cultural development. The common utilisation of digital technology is only a basic prerequisite and by no means a guarantee for the emergence of interoperational systems or integrated service offers. Given the fact that no single player has yet materialised which is able to control all areas of the emerging value chain, the overcoming of technical and organisational hurdles will require a significant amount of active cross-industry co-operation. Technically, this refers to the need of defining, developing, and deploying platforms that will be able to seamlessly deliver all kinds of media, information and communication services.

In this context, companies increasingly recognise that embracing, influencing, creating or denying standards can be a central tool for improving their strategic position in the newly emerging digital convergence landscape. While such a behaviour might not be a new phenomenon (the history of the IT industry gives a lot of examples), the crossing of industry boundaries adds a new layer of complexity to the topic [4, p. 87]. Given the novelty of these circumstances, it is by no means sure what might be the most ‘successful’ approach towards this problem in terms of individual benefits for single companies and in terms of the promotion of innovation and market success for integrated media platforms as a whole.

Therefore, this paper aims at outlining various types of basic approaches towards standardisation processes in the convergence context and giving empirical examples of the categorisation of different companies within this framework.

II. THE ROLE OF STANDARDS IN THE CONTEXT OF DIGITAL CONVERGENCE

Not every new multimedia-enabled or interactive information technology product or service is a manifestation of digital convergence, although this impression is often imparted by marketing announcements or press coverage. The qualitative novelty of digital convergence applications lies in the ability of the user to comfortably utilise several products or services from formerly separated sectors of the information and communication area in an integrated environment.

However, the underlying technical foundations and specifications of today's telecommunications, computing or broadcasting systems differ fundamentally. For any crossing of borders between these systems, there is the need to find a solution for working around these differences. This obvious need to establish a common way of sending, manipulating and interpreting data originating from various sources, routed via various networks and received by various devices suggests that a rapid and consensual development of standards would be a very appropriate solution [5, p. 31]. However, there are two major roadblocks for this development.

The first one is technical. Formal standardisation processes have regularly been blamed for failing to succeed because the pace of innovation in the IT

sector was in fact too fast and powerful. While Internet-based standards such as TCP/IP and HTML have proven to be extremely successful, ongoing pressure to cope with new user requirements and usage patterns will surely drive the pace of innovation in the area of networked computing. In the World Wide Web, the requirements of prototypical applications enabled by the convergence process have caused the need to find – mostly application or problem specific – solutions for cross-platform interoperability. Prominent examples are the struggles for Internet video streaming or Internet telephony formats. Very often, proprietary solutions have found widespread acceptance before any formalised standard could realistically materialise.

The same problem is also present in the spectrum of (digitisable) non-IT services which are relevant for the convergence process. Digital television is still in its infancy, and accordingly the path of future technical development is still relatively open and focus of intensive, controversial debate. Even the traditionally standards-driven telecommunications industry is in the process of steadily innovating and promoting new service categories within a context of significant technical discontinuities.

The second roadblock is of psychological and economic nature and relates to the business opportunities and risks generally associated with standardisation. Basically, established standards can create a more open competitive environment under many circumstances. In such an environment, even small companies are able to offer solutions being complementary or substitutive to the platforms of dominant players. As digital convergence diminishes the protective boundaries between various industries, the

implications of this effect for all market participants are being significantly magnified [6, p. 26].

Given the chance to achieve economies of scale and scope in a technically converging environment, some companies increasingly seem to see the need to reach out to new business areas in order to control significant parts of the emerging value chain. Incumbents in certain product or service areas having comfortably focused on technological niches or successful proprietary solutions might then increasingly get under competitive pressure.

This danger of losing a formerly strong market position can lead to the attempt to slow down or to obstruct the development of standards. This can be done either by trying to defend stand-alone solutions or by promoting a convergence path that is technically based on the own company's proprietary solution. Therefore, it can be doubted that the theoretically beneficial influence of standardisation in a complex, heterogeneous and dynamic technical environment will materialise very quickly. However, there are numerous attempts to achieve standardised cross-industry solutions for the market.

III. CROSS-INDUSTRY STANDARDISATION EFFORTS

Given the constraints of this short paper, the various convergence related standardisation efforts cannot be discussed in detail here. However, it can be noted that there are considerable standardisation activities in various industry specific or cross-industry interest groups which are specifically dealing with questions related to convergence and media integration.

To name one example, the US-based Advanced Television Enhancement Forum (ATVEF) is a cross-industry alliance of companies from broadcast and cable television, consumer electronics, and the PC/software industries. Participants include NBC, CNN, Intel, Microsoft, Sony and Warner Bros. The alliance aims at defining protocols in order to promote 'enhanced television' which is going to be independent of the transportation platform or receiving medium used. The concept is based on achieving full Web compatibility by embracing existing Internet standards such as the Internet Protocol (IP), Hypertext Markup Language (HTML), Uniform Resource Identifiers (URI), Multipurpose Internet Mail Extensions (MIME) and the Hypertext Transport Protocol (HTTP).

The alliance explicitly mentions the goal to build critical mass in the marketplace in order to accelerate market development. It co-operates with other standards setting bodies such as the W3C, digital TV consortia (ATSC, DVB) and the OpenCable consortium.

IV. STRATEGIC APPROACHES OF COMPANIES TOWARDS STANDARDISATION

The approaches of companies in terms of finding the 'right' technological platform are manifold. Although the speed of development and the rapid change of direction does not yet allow for a conclusive categorisation of these approaches, it can be noticed that there are certain patterns which characterise the approach of different companies reacting to the challenges of digital convergence and standardisation.

A. Widespread Participation in Standardisation Processes

The ATVEF example mentioned above shows that important players from various industries are actively involved in standard setting activities in areas which may become important for their future business. This approach might enable companies – up to a certain degree – to influence the direction of the standardisation process according to their own technological paradigm. On the other hand, it might be possible to slow down the process by obstructing consensus if the company itself is not yet prepared for presenting compatible solutions or products.

As it is not clear yet which specifications or concepts will be successful in the long run, a company probably needs to spread its efforts widely in order not to have backed the wrong horse. However, there is a danger of diluting management attention by being involved in too many different development processes. In the end, the company could result in being ‘stuck in the middle’ and getting into internal or external loyalty conflicts between different paths of development.

B. Focussed Alliance-Building

If a company decides that the disadvantages of participating in standardisation processes outweigh the potential advantages, it might rather concentrate on the development of own technical specifications. The broad competencies needed and the necessary scale and scope could then be derived from the building of ‘private’ alliances with other industry players.

As the rise of leading PC industry players like Microsoft and Intel shows, there are huge rewards waiting for companies

which are able to define and to market solutions ahead of the competition in a newly emerging market. The fundamentals of network economics give an explanation for this first mover advantage situation [7], [8]. However, as there is now a common awareness of these advantages and the respective disadvantages for all other companies, it has become much more difficult to develop and introduce a platform which excludes major competitors from participating in the market. A company trying to achieve this will certainly face fierce competition and competitive alliance-building very quickly.

C. Wait-And-See Approach

Finally, it could be most efficient to embrace standards only when they have proven to be generally accepted by the market. This approach surely causes the least resource constraints, but it also carries the risk of missing the chance to influence technological development. A company might end up with a lack of decisive know-how for developing new products and services, and, maybe even more dangerous, with a lack of consumer awareness, marketing opportunities, and alliance partners.

V. CASE EXAMPLES: DIGITAL TV PLATFORMS INTEGRATING NEW SERVICES

A single company might well and probably will engage in all three approaches when reacting to different business challenges under different circumstances. It can however be expected that there will be a dominant pattern of behaviour which describes a company’s general attribute to the question discussed here. If one strategy seems to be superior

to the others, a company could decide to extend this strategy to other battlefields in adjacent technical and business areas.

In the following, the development of digital home entertainment platforms in Europe will be taken as an example for looking at practical manifestations of the approaches described above. At the moment, the services offered by these digital platforms are still clearly focussed on television programming and pay TV services. However, the suppliers are planning to extend their services to include more interactivity, online services and eventually communication services as well. If today's supply infrastructure used for digital TV can be enhanced by technical upgrades as needed, this infrastructure could become the starting point for the development of a truly wide-ranging spectrum of media and communications services.

A. Java-based Platforms

Java is a standardised application programming environment developed by Sun Microsystems. Java offers the opportunity of platform independent computing on the basis of allowing for cross-platform usability of programming code. These advantages of Java in the area of networked computing have raised the interest for adopting Java to various other environments as well, such as embedded systems. Also, a digital TV API (Application Programming Interface) for the requirements of platform-independent, interactive delivery of content is being developed. Adjacent services such as Electronic Programme Guides (EPG), Video-on-Demand and Conditional Access are also to be covered by this development.

Sun have traditionally committed themselves to the principles of open,

neutral systems and standardisation. This is not least a deliberate contrast to Microsoft's mainly proprietary product strategy, although both companies are participating in a range of standardisation activities. Sun's commitment even has resulted in an effort to put the Java specifications forward to ISO standardisation. The fact that Sun have now redirected their standardisation efforts towards ECMA in order to retain as much as control of the process as possible does not contradict Sun's significant focus on standardisation. It rather underlines that the company tries to use strategy (A) as a major means of achieving its strategic targets. Therefore, suppliers of digital home entertainment platforms which are contemplating to base their systems on Java technology can be considered as followers of strategy (A) in the emerging market of integrated media systems.

So far, there has been considerable, though not universal backing from Consumer Electronics manufacturers and operators for the incorporation of Java into digital TV systems. Canal+, the leading European digital TV operators, seem to have plans to redirect their technical efforts towards the incorporation of a Java Virtual Machine into their platform [9]. Also, the DVB Project is contemplating to use Java as a key underpinning of its Multimedia Home Platform. Given similar developments in the U.S., there might be a real chance that Sun's strategy could provide the company's technology with a significant role in various sectors of the marketplace of integrated media systems.

B. Proprietary Platforms

Not all operators of digital TV seem to believe that the extension of services on their platforms necessarily must be

accompanied by a switch towards open systems. For example, DF1 is a German digital television programme package distributed by the Kirch Group. Later in 1999, the company will combine the service with former competitor Premiere which also has been fully acquired by Kirch. There are plans to integrate various non-TV services such as Internet access and E-Commerce into the spectrum of DF1 services.

From the beginning of the DF1 service, the company has tried to expand its market position based on proprietary solutions and strong, exclusive alliances with business partners from other layers of the value chain. This strategy has been implemented by various moves. A huge amount of proprietary set top boxes was ordered from hardware manufacturer Nokia and a closed, non-compatible API for the system was developed. The business model is to achieve critical mass by pushing the own platform and its proprietary components to the market in close co-operation with selected alliance partners.

At the moment, the activities of Canal+ and DF1 are restricted to a rather small market segment of the emerging spectrum of integrated media and communications services. However, they show that the different approaches to standardisation as presented above can be found within such a market segment. Differences between market segments are likely to be similarly significant at least. The long-term success of both players will surely depend on their ability to integrate new services to their portfolio, thereby possibly cannibalising businesses which are at the moment not even seen as competitors. On the other hand, if the business model of these companies does not prevail, they could as well become victims of companies which

have focussed their effort on a different technological and economic paradigm (such as the Internet).

C. Manifestation of Wait-And-See Strategies

The concept of a wait-and-see strategy postulates that a company deliberately postpones decisions about market entry, organisational measures, and technical determinations until a dominant trend can be recognised. While internal decisions might have been made by companies according to that strategy, the early stage of market development for integrated media and communications packages should not yet allow for empirical evidence at the moment. Therefore, further market development has to be waited for. However, TV operators that do not yet have decided to enter the market of digital TV and additional digital services at all can probably be attributed to that group.

VI. CONCLUSION

Given the early stage of development, it is not sure which approach of dealing with the challenges of standardisation in the context of digital convergence will be the most successful one. Three basic generic approaches have been presented here. Up to now, strategies of most companies seem to be erratic and unstable in many cases.

However, as the current hype and excitement of the digital convergence discussion increases, most major industry players probably will not be able to remain passive (approach C). Rather, a flexible combination of approaches (A) and (B) with a more or less clear preference for one of both alternatives seems to be the most likely strategy. The legacy of the industry sector which was

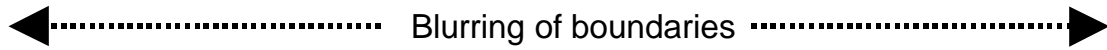
the company's respective starting point for the move into the converging market environment will surely be an influencing factor for a company's direction as well.

Systematic empirical analysis – based on the framework proposed here or a similar one – might help to assess the suitability of various approaches for individual companies in the context given. Such work could help to validate the influence of standardisation on technical progress and on the realisation of potential economic benefits in the digital convergence environment. Further insights could be derived from replacing the black-box analysis of company strategies by taking into account different interest groups and decision making processes within a company.

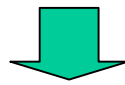
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Digital Convergence, Company Strategy and Standardisation



- Joint delivery or marketing of communications products & services
- Multiple (digital) distribution channels



Cultural...

Technical...

Regulatory...

...differences between sectors



Standardisation as a (partial) solution?
Three possible strategy options for companies



(A)

Participate in standards setting;
adopt standards

(B)

Focus on private alliances

(C)

Wait-and-see

**Examples
(European enhanced digital TV platforms)**

Java-based API for EPG based on DVB MHP standards
-> *Canal Plus (France)*

Proprietary API, EPG, hardware
-> *Kirch - DF1/Premiere (Germany)*

(no market entry yet)