Innovation and Business Models:
How organizations can benefit from new ways of interacting

A white paper of the TCS-London School of Economics Innovation Study

By Jonathan Liebenau
with Patrik Karrberg

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Summary

Innovation can be fostered in a wide variety of settings and is conditioned by many different factors, but some contexts are more likely to stimulate, accelerate and sustain commercially effective innovative activities. Favourable conditions arise through interactions of various kinds: between company divisions, within industrial bodies, as part of networks, with varying degrees of openness to outside contributions, and most especially in conjunction with firms within business relationships.

In this white paper we consider the state of the art in innovation studies and propose a new way of thinking of innovation in relation to an analytical approach to business models that can demonstrate where innovative sites can emerge. We show how those locations of innovation change as different factors are re-configured, ranging from regulatory or other legal conditions to competition and technical opportunities.

Using our analytical approach to explore innovation at the borderlands of business relationships, we show how content delivery to mobile telephones has emerged in a variety of forms of intricate innovative interactions, changing over time and differing significantly in markets like Japan and the United States from those in the EU and elsewhere. We test the approach further in considering new business models in the events ticketing industry and show how this approach can be indicative of where innovative processes are likely to emerge.

Our approach leads to a series of recommendations for how large firms with a wide range of different kinds of business relationships can routinely describe, analyse and monitor the changing locus of innovation. We argue that as a systematically applied tool, this technique can assist in assessing and guiding firms through the process of establishing relationships that are fruitful for new kinds of problem identification and solving.

Our findings also shed light on what kinds of external factors contribute to innovation within new business models and are evocative of policy preferences for regulatory regimes, incentive schemes, and other aspects of the legal and market environment.

I. The current thinking about innovation

Innovation in firms is important not only because new products and services help capture and retain market share and increase profitability, but also because as the business environment changes new opportunities and constraints emerge and need to be responded to. Our challenge is to address new thinking about innovation from the perspective of business models and to use them analytically to improve decision making.

For some, the unit of analysis for innovation is foremost the individual who reacts to in ways that can be scaled up to organizations and networks of activities. It is in this way that diffusion takes place, the dynamics of which relate the individual to the organization and which give institutions attributes that are analogous to the habits, bounded vision and "thought" of individuals. For others the firm behaves more like an organism which can have different kinds of changing relations with its environment, forging alliances, joining networks, taking partners and freely changing its boundaries.

One key problem is that innovation is typically limited to routine, local searches. In narrowing their options to closely related areas of investigation, firms settle into basic routines that forego broader opportunities. Since competences in the ability to identify, expand and exploit business opportunities is unevenly distributed among firms, organizations that successfully adopt more open innovation models could enjoy an increasing absorptive capacity, close understanding of customers' and suppliers' needs, and the direction of future trends.

Type of innovation	**Strategic advantage**
Novelty	Offering something which no one else can
Competence-shifting	Rewriting the rules of the competitive game
Complexity	Difficulty of learning about technology keeps entry barriers high
Robust design	Basic model product or process can be stretched over an extended life, reducing overall cost
Continuous incremental innovation	Continuous movement of the cost/performance frontier

Table 1: Strategic advantages of innovation (Tidd, Bessant, Pavitt, 1999)

There are a limited number of options to technological substitution as seen in the perspective of the firm. A firm might switch to the new technology, accelerate improvement of the established technology, or exit from the market. An effective way to explain how technical innovation takes place is to see it as focused around the elimination of obstacles to growth, called reverse salients.

Certain innovations can be described as "disruptive", also known as "transformative" technologies. Disruptive technologies improve certain product features while sacrificing others, and are typically more appropriate for new customers than existing ones. Clayton Christensen, who popularised this notion in his seminal book *The Innovator's Dilemma* (1997), based much of his argument on a detailed study of the hard disk drive industry in the 1970s and 1980s. He found disruptive technologies at work as established manufacturers were not interested in supplying smaller disk drives with smaller memory (and margins), while new entrants took new customers. This trend was repeated for minicomputers, PCs and

laptops. In the case of the Japanese mobile telephone industry, Jeffrey Funk[i] noted that some technologies are disruptive for certain incumbents but not for others, depending on previous technology base and choices. The Sharp and Seiko companies commercialized LCDs faster than RCA, which was the firm that developed them, since this new technology was not disruptive for one of their current markets (calculators that required low power consumption) while it was disruptive for computers, because of insufficient speed, which was the main market for semiconductors in the US. These sorts of disruptive technologies often start from a lower performance level, but typically increase rapidly to higher performance levels.

We should take this phenomenon along with George Stigler's observation (1951) that many industries begin vertically integrated due to their small size but then gradually become populated by specialist firms as they grow. As an industry's demand begins to contract later in the life cycle, industries tend to reintegrate. Christensen[ii] connects an industry's vertical integration and horizontal stratification with the notion of "structured dialogue". When structured dialogue takes place between two actors, *markets* are the most efficient coordination mechanism between firms (as in contrary to *vertical integration* of functions within the same company). Three conditions must be met for a "structured dialogue" to take place:

1) The customer that procures must be able to specify which attributes and parameters that must be provided.
2) Metrics for those attributes must exist, and the technology to provide those metrics must be readily available.
3) The procuring company must understand the interactions or interdependencies between the attributes of what is provided and the performance of the system in which the procurer will use it.

When these three conditions are not met, interfaces are *interdependent*, and firm integration (vertical integration) is the most effective form of coordination.

As an industry is developing with new technology, structured dialogue will sometimes be the general case and sometimes not, and added value will shift from some parts of the value network to others. This causes swings in a cyclic pattern between horizontal stratification and vertical integration with time. A decision by a company to outsource a less profitable component could later turn out to be a vital component for future vertical integration and profit zones again A famous example is IBM's decision to create a structured dialogue with Microsoft for the PC operating system, which at the time was less profitable than the vertically integrated hardware that IBM provided. Years later, the OS turned out to be a profit zone rather than the hardware. When IBM realised this it was already too late for them to enter the OS market.

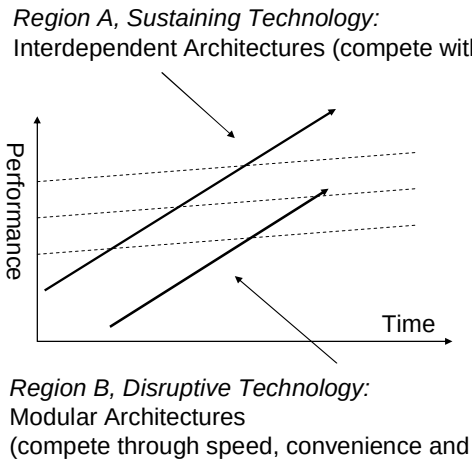


Fig 8: Transformative technologies versus sustaining technology (Christensen et al, 2002)

Good practice in innovation management springs from firms in symbiosis with institutions, such as financial services, intellectual property rights, technological education, regulatory and other state bodies, and international standards. Industry leaders from a previous product generation often fail in keeping their leadership through the transformation into the new product generation, as the mindset (or business model) is still focusing on the old architecture, missing out implications from novelties.

Tidd et al.[iii] suggest four phases making up the innovation process among organizations: 1) Scan and search of their environments to pick up signals of potential innovations (signal processing). 2) Then strategically select the things which offer the best chance of developing a competitive edge (strategy). 3) Having chosen an option, organisations need to resource it for exploitation (resourcing). 4) Implement the innovation from idea to launch, as a new product/service, or new process or method within the organisation (implementation). When new generic technologies become available, the bounded visions of managers[iv], due at least partly to different knowledge bases, imply that firms may differ greatly in their perception of these opportunities. Networks can partly compensate for limitations in the firm's search space as we will se in the next section.

A basic assumption in the network model is that the individual organisation is dependent on resources controlled by other organisations. Because of the interdependencies of firms, the use of an asset in one firm is dependent on the use of other firms' assets. This dependency between firms, or actors, has to be coordinated. Coordination takes place through firms interacting in the network, in contrast to the traditional market model where coordination is achieved by organizational hierarchy or through the price mechanism[v]. Networks can also be seen as actors on a higher level[vi]. Actors and artefacts (products, companies, networks of companies) interact to adopt new artefacts within the network[vii].

Teece and Pisano[viii] view firm-specific capabilities as being renewed and embedded in its processes, market positions, and expansion paths. Dynamic capabilities are strategic and they cannot be homogenous assets. These are e.g. internal competences such as values, organisational experiences, and culture that cannot be bought on the factor market. Replication and transmission of knowledge can only take place when information is codified, specified and it is understood that replication takes place. The two main values of replication are to support geographic and product line expansion, and the spread of valuable capabilities to customers. Strategic change is costly in the dynamic capability view and therefore gaining opportunities for competition through diversification are costly. It can be made easier when an efficient market for technology exists. The inherent value of a technology remains latent

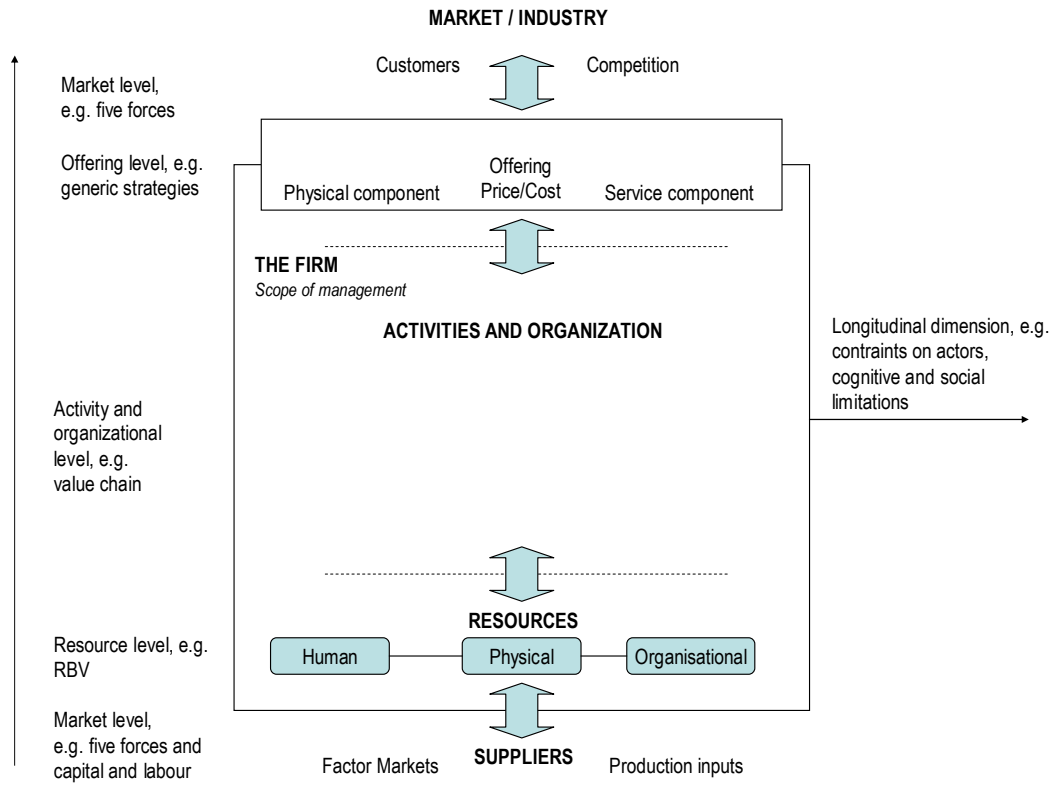
until it is commercialised, and it is crucial for technology managers to find the "architecture of the revenue" early on in the development process[ix]. The business model can be said to be a situational cognitive model of value creation, being incremental and divisional rather than rational and corporate in order to support the firm's adaptation process to changes in the external environment.

II. Business models

The logic of an established and successful business model could also constrain an organisation's search for new alternative business models, described in the literature as establishment of a "dominant logic"[x]. Habits of established routines and dominant logic confines the firm in various ways: local search relying on basic routines[xi], learning processes being local and path dependent[xii], bounded visions among managers meaning firms may differ greatly in their perception of new opportunities[xiii], or innovators loosing out to imitators due to lack of complementary assets[xiv]. Established business models become embedded in the organisation, which is described as the "success breeds failure syndrome"[xv] that disadvantages established industry leaders when challenged by start-ups with new and transformative technology. It could also affect the firm's absorptive capacity negatively[xvi]. To overcome limited information and bounded visions in new technology development some scholars propose firms to invest in integrative capabilities[xvii], complimentary assets[xviii], and manage disruptive technologies outside the main business[xix]. Integrative capabilities are competences spanning organisations, which takes time to establish, as they are the product of many individual management decisions over time. Complimentary assets could be external integrative capacity, and the maintenance of geographically dispersed research centres. Managing of transformative (and disruptive) technologies keeps the organisation involved in alternative value networks. Limitations in a firm's ability to autonomously evaluate business information could lead to 'strategic convergence'[xx], i.e. firms imitate each other. Successful business models get imitated by firms that do not understand that the strategic process involves designing a custom strategy or business model for the specifics of each situation that involves dynamic capabilities. Firms involved in strategic convergence typically underestimate the difficulty of replication and imitation of dynamic capabilities. Finally, if a company does not have an already sufficiently developed level of technological knowledge in a specific field, it turns out to be extremely difficult to absorb newly acquired knowledge into its own technological core.

A generic business model with the following units of analysis can be defined[xxi] and used to develop action-plans and pinpoint certain critical components within the organization:

1) customer
2) competitors, e.g. are relations to customers long-term or short-term, do both parties share information, or is it simply a money transaction.
3) offering, (services and products have a certain price, cost, support, service, quality, consists of bundled products)
4) activities and organization,
5) resources,
6) factor and production input suppliers, and
7) the managerial and the organizational, longitudinal process component. It covers the dynamics of the business model in time for cognitive, cultural, learning and political constraints on logical changes in the model, as illustrated in the figure below:



The structure of the businesses model, as from Hedman & Kalling, 2002

Customers and potential customers are part of the market network and can be assessed to see how their needs affect the offering and other components of the business model. Suppliers can be potential competitors. The relation with customers is an indicator of current and future business potential: personal or anonymous, long or short term. Is there a knowledge exchange or only money transactions, is there visibility into the supplying firm regarding cost structure, price policies, technology, and research? Understanding the competition calls for understanding the competitors. Separating competing products from competing substitute products could be difficult. Scale and size, product range and innovation, degree of differentiation, cost structure, competencies, value chain configuration, organizational structure and their ability to raise switching costs, should all be parts of a detailed business model.

For organizational analysis, the structure of the organization, its control and coordination, relation to other organizations, and industry structure must be understood. The division of labour can be done through either a generalist or a specialist approach (for example by departments that specialise in certain tasks) or through input-based versus output-based approaches (considering the objective of the task, such as by products or customer segments). Division of responsibility and hierarchy, openness for internal learning, geographical proximity (Silicon Valley) and inter-department communication also affect the capability of the organization that can be mustered into the business model. A highly hierarchic structure could mean slower product development due to excessive documentation demands, and a generalist approach could complicate the innovation process.

III. Innovation at the borderlands

Let us consider business models in relation to the boundaries between firms in value chains and as parts of networks. First we can differentiate between innovation seen as a product of in-house activity and that seen as a feature of interaction. In those industries with the greatest

dependence on research and development such as pharmaceuticals and electronics, sources of innovation have moved from almost self-contained and usually secretive R&D activities to more inter-connected activities sensitive to a wider range of influences.

At the borderlands among organisations we can characterise the exchange of information across borders by various mechanisms, ranging from imposed technical standards and formal contracting to shared business goals, open innovation and informal interactions. This theory brings together approaches from the analysis of transactions and business models with innovation theory from an institutional perspective that focuses on the ambitions and expectations of actors and the organisational structures they construct.

We can think of such borderlands of innovation with the metaphor of an estuary. A highly fertile region is often created where fresh and salt waters mix. Depending on the geology and hydrology, such regions can form deltas or marshlands or saltwater meadows, or they might be rocky, barren regions where the waters wash back and forth without much short-term effect. Similarly, in the case of different business interactions, there are a variety of forms that can be created by the mixing of ideas, projects, goals and especially the creative engagement of different kinds of people. Sometimes these can also be barren, so it is worthwhile discovering those forms of interaction that are most productive, given the settings for interactions that firms are able to create.

IV. The case of mobile content and billing

We can fruitfully apply this approach to the major technologies enabling the mobile internet, which include the interfaces between infrastructure networks, handsets, and service (or content) delivery systems. The process of delivering mobile content from the network to handsets is becoming increasingly standardized over different commercial products as proprietary delivery mechanisms are being exchanged by components making up delivery platforms. This trend is supported by content formats migrating from mobile-specific into mainstream internet formats. An increased interaction between value chain actors has developed from the early days of the mobile internet involving telecom operators, consumer brands, and technical enablers, amongst others. Mobile service delivery technologies have become the glue between previously secluded "telecom" and "IT" domains as strategic products for leading IT systems providers as exemplified by large players who have wholly or partly integrated mobile delivery offerings (Oracle, Amdocs, Microsoft, Ericsson, Matsushita/Panasonic, Google, Apple, etc.).

The mobile delivery mechanisms are explained in the following section. It is set in its context as an indicator of fixed and mobile convergence. Further, several boarder lands of innovative activities can be identified:

- Industry level: Technical interfaces between fixed and mobile service delivery platforms
- Product level: Boundaries between product markets (e.g. market of mobile music downloads and digital event tickets
- Firm level: Organisational boundaries in the delivery chain
- Technology level: Interfaces between mobile delivery components

The convergence of boundaries and interfaces in digital services has deep-going effects on back-end systems and database integration. This provides opportunities for organisations with vertical capabilities to both analyse dynamic effects of service innovation and provide action for system implementation.

There are at least three key driving forces for integration and convergence between the mobile and fixed internet:

1. Technology components of the service delivery platform that are becoming standardized as smaller players continue to merge into larger ones as margins decrease.
2. Carriers increasingly want to buy standard and exchangeable components after many experiments with small and proprietary systems.
3. Established media companies want to deliver their content by themselves, not only directly to carriers. They desire to plug into the carrier's billing systems (through billing mediators), but deliver contents to end customers by themselves.

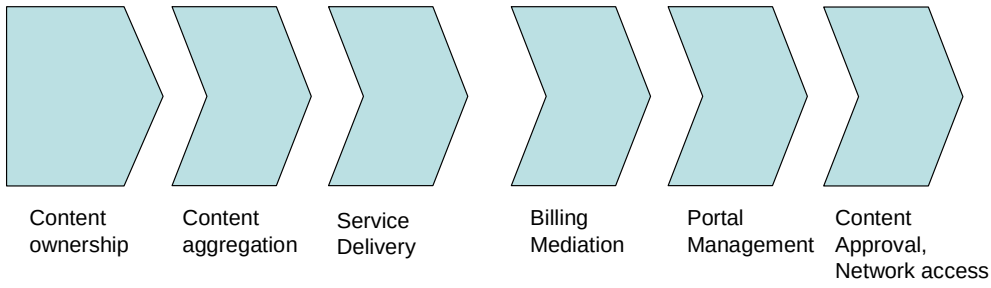
Plain messaging (SMS and email) has attracted most users and the highest volumes of sales in Europe and Japan, but it is premium services that have attracted most resources from content providers, enablers, and carriers alike. This may be changing within Japan with the introduction of mobile TV in 2006. During the recent period of mobile service expansion, premium SMS and charged mobile internet downloads account for the bulk of revenues for content providers. However, carriers have reaped most of their profits from bulk SMS and email, which constitutes a natural "incentive gap" between carriers and content providers. Here we divide mobile services into two components:

- A: The service delivery mechanism (starting from its origination with a content holder and terminating on the mobile phone).
- B: The actual intellectual property object (the file or "content").

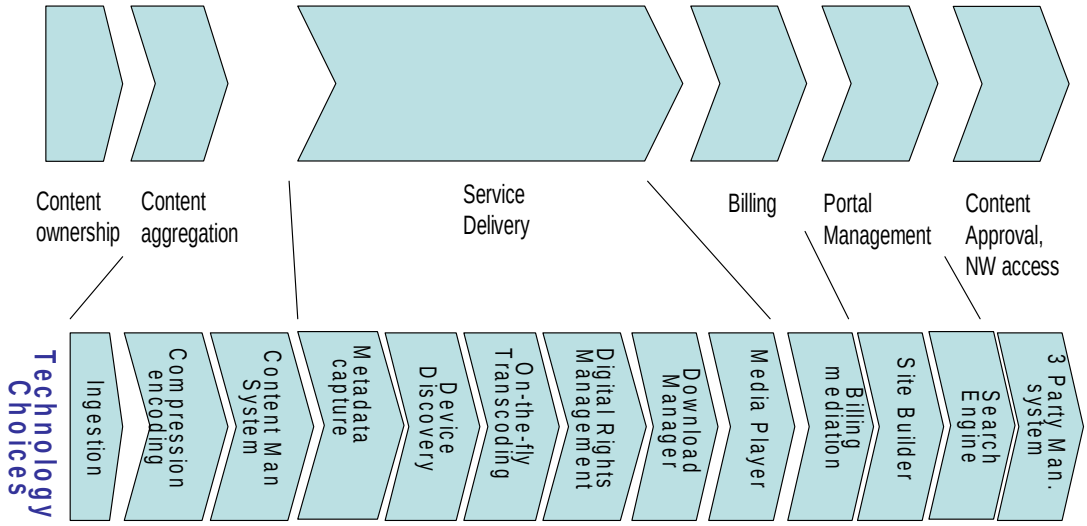
Both infrastructure networks and handsets have entered a high level of standardization across markets, and mass production for the global market. But service delivery platforms are only partly standardized, and have only recently started to develop from proprietary and local systems towards generic modules and the mass market. As this occurs, we pass through a period of considerable innovation at the fertile boundary regions between components of the model. Content delivery systems are technology components that can be seen to be holding back systems growth. In an effort to counter this, massive resources are currently being invested by key actors to achieve new service delivery innovations that would enable a higher output of the whole mobile internet system. When the mobile internet became available around 1999 in both the EU and Japan, delivering content was a disruptive set of technologies for all content holders other than new start-ups. None of the contents (images, sound, text) used on the internet could easily be applied on mobile phones due to different browsers, mark-up languages, file formats, or due to general constraints from the handsets. For users the content was expensive, difficult to access, and of poor quality. Continuing standardization and convergence of content formats and delivery technologies have been instrumental in fertilizing the borderlands of emerging business models.

This makes the mobile internet decreasingly disruptive for several actors in the mobile delivery value chain, and will spur new entrants. However, the mobile internet can still be disruptive for PC internet content providers, as they must adapt their contents for small screens and keyboards, thereby creating a discontinuity with previous services. This enabled new entrants into mobile shopping, for example, by firms like Tsutaya Online (with 8 million targeted recipients of mobile notifications of products and sales of records and books) and Index (perfume promotions by mobile email) in Japan. In this way technologies can be disruptive for some firms and not others.

Now we consider service delivery mechanism on billing, or so called micro payments. A conceptual model of the generic service delivery mechanism of delivering digital content to mobile phones is provided below:



This mechanism can be further expanded with the underlying delivery technologies:

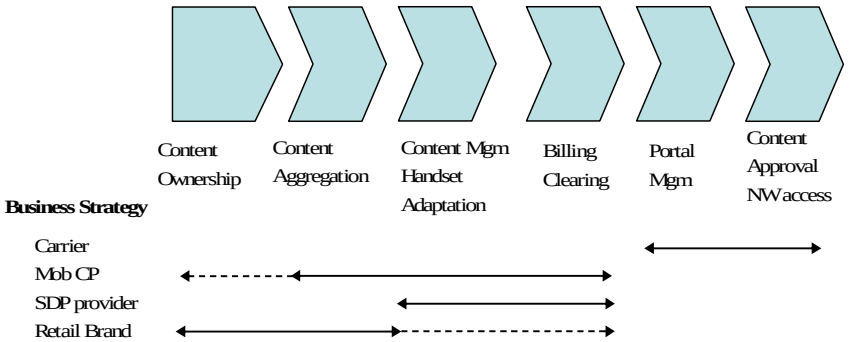


Service delivery platforms emerging during 2002-2007 were disruptive technologies to most content aggregators and even to carriers who had developed their own proprietary mechanisms. However, many carriers in the EU chose to procure new service delivery platforms for SMS and some lesser WAP billing systems to trusted partners. Most retail brands (including game makers) hadn't ventured into mobile service delivery by 2003, so service delivery platforms were not a disruptive technology to them. Service delivery platforms emerging as system products were disruptive to most content aggregators and even to carriers who had developed their own proprietary service delivery mechanisms. Carriers and brands launching mobile services since 2007 were increasingly concerned with commercial aspects of content editing and retailing rather than the basic functionality of handset rendering and content management. Customer business benefits rather than technology have become selling points and the main source for coordination costs for the providers.

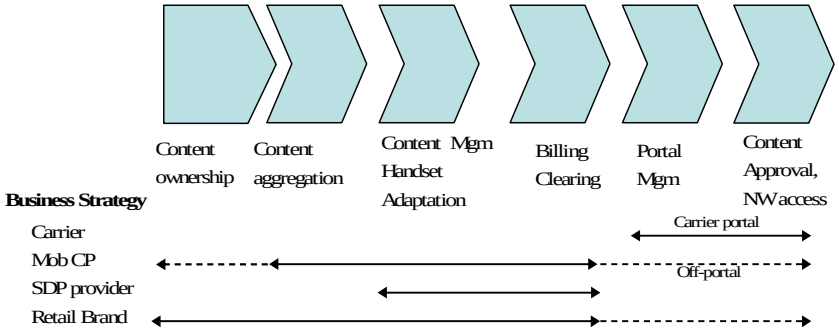
There was an early focus on performance-based positioning of contents in the i-mode portal, which provided trust with the users and clear incentives for content providers. Overall, Japanese carriers were quicker in interpreting signals of network effects and positive feed-back from consumers than European counterparts. In contrast, the low replacement rate of handsets and weak customer relationship management from carriers towards service providers in Scandinavia (the leading market at the time) exemplifies how network effects were diminished from 1999 to 2002 in the EU.

Carrier portals are marginalized for SMS services and service delivery platforms have become a key element for cost effective mobile internet sites in the growing competition among carriers, retail brands and content providers. Several carriers outsourced portal management and focused solely on wholesale of data and SMS. Similar and converging technologies have been used in Japan and Western Europe for mobile service delivery between 2000 and 2007. A general convergence in the global market of PC internet and mobile phone internet file formats is a major reason for this. Hence, the technical infrastructure itself doesn't explain major differences in service provision of new and innovative service offerings. What explains it is the ways in which interaction across boundaries has occurred. Where Japanese business models have been more fertile, they have provided a lead that eventually some European firms used as exemplars for convergence. Below is a comparative illustration of business strategy linked to activities undertaken 2000-2007 (firm arrows indicate primary activities, dotted lines secondary activities.

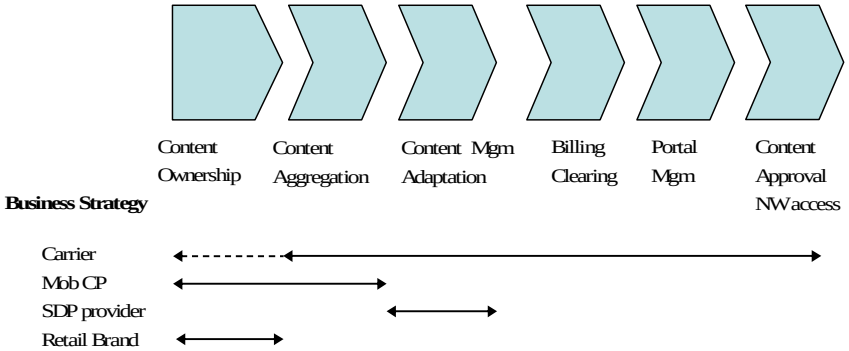
Japan, 2000



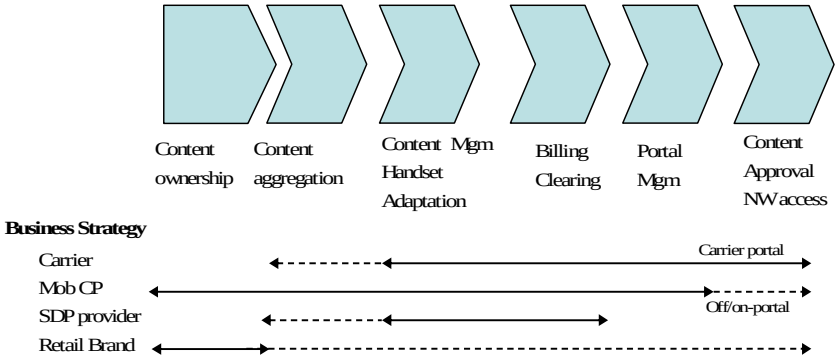
Japan, 2007



The EU, 2000



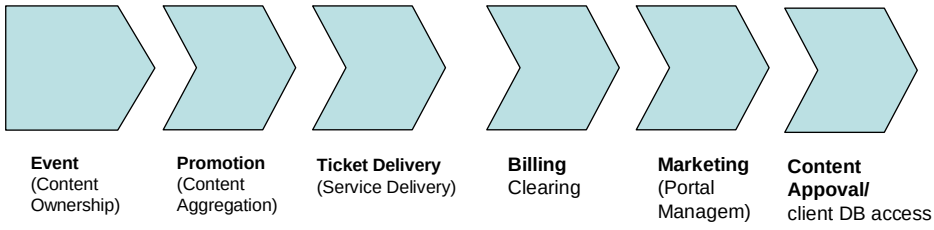
EU, 2007



V. Innovating at the borderlands in the events ticketing industry

The event ticketing industry's shift from physical delivery of tickets into a digital value chain provides us with a useful application of the approach we used in the case of the service delivery model. We start with a three level analysis that is provided by business strategy among actors, the underlying activities, and finally technology choice. Growth trends in ticketed events are strong and an estimated 50-80% of sales (depending on event; concerts more so than football games) take place on the Internet.
Let us consider how the business strategy among the main players (promoters, sponsors, primary ticketing sellers, and web portals) around these activities have changed since early 2000, when digital ticketing started to have an impact on their marketing and delivery to customers. Then we will consider its effect on the changing boundaries and the temporal dimension of enabling communication close to an event. The comparison with Japan is used to illustrate how the mobile phone supports a higher degree of interaction with customers.

We begin with our conception of the value chain. This will serve as model for our discussions and draws upon the service delivery model introduced in previous section:



In the digital ticket value chain above, a flow can be seen to run from the event (content ownership), to its promoter who manages artists (and often box office revenues and walk-ups), then a ticket delivery firm providing customers with either the physical ticket through the mail or digital receipts (acting on behalf of the promoter), billing clearing (often through credit card payment), into the actual marketing of the event, which could go through a database partner who provides details of potential customers (client database access).

This ticketing example fits our theory of boundaries as we will show how changes in business strategy and corporate partnerships in the event ticketing industry are driven by a rapid value chain reconfiguration, which in turn informs us of what technologies are needed to unlock further customer value. This method of boundary analysis provides us with tools to analyze how successful companies with a holistic approach have dealt with problems in ticketing.

The web seems to offer increased information transparency compared to its main alternative, telephone transactions and customers regard "ease of buying" to be of primary importance. The main quandaries for the ticket ecosystem is to maximize the output of the system through ease of buying (including delivery) and availability of tickets to customers. Price is still an issue, and phone sales were regarded as opaque on face price and charges, in the survey above.

Mintel (2006), the leading UK leisure industry research firm, expects that by 2012 people will spend 30% more time away from their own homes in the UK to experience increased leisure pursuits. It also implies further challenges to reach people as they are away from their desks and sofas (watching less TV). This challenge is addressed mainly through the mobile channel, and increased lifestyle advertising (primarily through social networking and database profiling) by the industry. However, the mobile phone bridges this change: increased reach, ability to supply offers closer to a venue start-time, supply alerts and content to promote

impulse purchases, and to engage customers in social networking activities while on the move.

Digital delivery of tickets
In Japan and the UK tickets are sold either through pre-ordering of tickets or direct sales over the web. Pre-order sales generate commission and total demand of the event can be estimated among primary ticket sellers by comparing with previous events in the database. Web ticketers offer an information service with notifications to users of future events, free of charge. Members log into these services with their mobile phone number and email address (users in Japan change their mobile email address often to avoid spam). This information services includes: e-mail magazines issued according to the entertainment genre, customised mail to registered members and single event requests. For these two information services, typically tens of millions of emails a month are delivered by the top tier ticket sellers. Through the direct sales channel member profiles are gathered for the database together with sales information. Seat layouts and corresponding price levels are shown for venues. Access guides, including maps, are offered both for mobile and PC users. Tickets can be paid on-line via all major credit cards, or in all major convenient stores in Japan (open 24/7 in Japan) up to the same day of the performance. In the UK, home printing of tickets is increasing. In summary, tickets are either picked up by the customer in a convenience store, printed at home (or delivered as barcode to the phone), or is delivered by courier. When users sign up for tickets or becoming member of a "ticket club" in Japan they fill out three forms: 1) member registration: sex, age, address, general event preferences, hobbies 2) number of tickets, and event information 3) a survey of their interests. The Japanese web ticket market strategy can be summarized as having a focus on web and mobile sales, extensive database utilisation, a concentration on pre-ordering of tickets and e-mail magazines, and partnerships with convenience stores for issuing tickets.

Our model provides a probe into the system of ticket reselling, which is a business ecosystem in transition. Fertile new borderlands are developing as delivery technologies are becoming widely available and customer contact becomes increasingly valuable ("owning the customer").

The general trend away from CD sales as main profit driver (for many bands in 2007, touring revenues constituted two thirds or more of total profits) has also increased the interest from the record companies for live events. The following trends can be spotted:

- Cross-selling of tickets to clients, whose contact details and purchase patterns are contained within retail databases
- A focus on expanding the mobile contents market with digital tickets for events relating to music, cinema, and other events
- Increasing social networking and community building towards the fan base, in order to derive lessons for more high-quality engineering solutions answering to customer need
- A shift in focus among actors towards a industry, and functional boundary analysis, rather than simply a technology-driven approach

As we enter into mobile e-commerce involving physical goods the power of conservative institutions in the industry (in this case ticketing) are arguably stronger than in the case of mobile digital contents, which could partly explain the early mobile content download success. In the concert ticketing industry, especially promoters hold a strong position as they manage the bands, and ticketing revenues traditionally were funneled through box office sales, or telephone sales (with subsequent mailing of physical ticket). Most venues are hired by promoters and therefore the control of ticket pricing is with the promoter. While the promoter is responsible for ticket sales of an event they may allocate some marketing budget

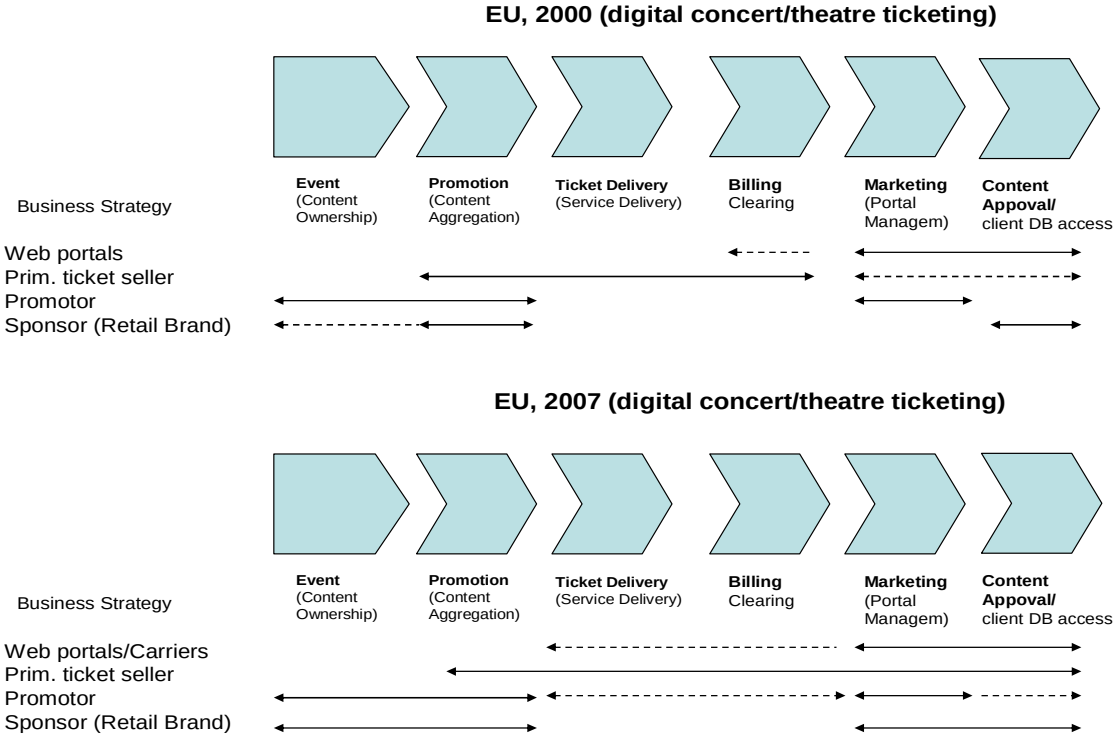
to the marketing department of a given venue. This is then used for local marketing, typically newspaper advertisements and flyers. While many events are targeted at younger people some promoters are from the old school of live events (typically previous artists themselves) and are therefore hesitant to use new digital communication channels. Promoters, who in most cases act on behalf of the artists and the venue owner, benefit from increasing usage of internet technologies: The revenue generated from sales of un-sold tickets drops straight to the bottom line of the net profitability of the event.

The introduction of social network functionality takes the following forms: directly on a web portal belonging to a firm related to ticket sales, or through on-line forums such as Facebook and Myspace. Several ticketing firms have launched forums on their web sites, where users can comment upcoming gigs, or even hook up with fellow fans they don't know yet.

The combination of these functionalities has at least the following effects:

- Internal reconfiguration: actors with strong internet communities can bypass the traditional promoter marketing channels (flyers, TV, other less segmented advertising). An issue for traditional promoters is that potential audience who have not yet attended any events are not logged in any databases.
- External: New actors with large databases of users (carriers, large retail brands, credit card providers) can strengthen their position. The boundaries are shifting and connecting islands of ticketing customers to the mass market (typically users that fit to the profile of certain events, but haven't turned up yet)
- Opens up for user-driven innovation: By making promotion material and fan clubs available on-line users can redistribute and alter the content. The secondary ticket market has grown largely due to these internet communities (tickets resold on Ebay, Stubhub etc).

Firms in the traditional ticketing value network can only monitor and fully benefit from these new user initiated approaches by intensifying their interaction with these users. This further strengthens the feed-back cycle and the dependence on on-line communities.



Around year 2000, box office and call centres were still the main channel for customers to lay their hands on event tickets. The ticket market was predominantly local or regional (for all but the largest events involving international stars), in the sense that newspaper advertising and flyers by promoters constituted the main marketing channel. On-line ticket firms lacked sufficient trust among customers to challenge the off-line ticket sales.

By 2007, the spread of on-line commerce and standardisation of underlying technologies have made new actors enter (carriers) and provided others with the means to supply a larger part of the value chain with their services (promoters, retail sponsor brands, web portals, all moving into ticketing and strengthening relations with end-users). ticket resellers have answered with consolidation (Seetickets in UK, second largest after Ticketmaster just acquired by Stage Entertainment in mid-January 2008).

The best case of promoters moving into the space of ticket reselling is "Live Nation"[xxii], who announced January 2007 they will drop their relation with Ticketmaster (the world's largest primary ticket reseller) and sign a 10-year agreement with CTS Eventim. They plan to launch their own ticketing business in 2010. Financial analysts estimate that Ticketmaster could loose as much as 14% of their total revenues due to this shift in strategy.

Forrester Research and Juniper (2007) estimate that South Korea and Japan overtook Western Europe in 2005 as the largest mobile commerce markets (they both passed the $10bn mark). However, Western Europe is expected to become the largest market (Japan will still have highest spending per capita) as users indulge increasingly in entertainment (music, games), voting, advertising, and ticketing.

The mobile channel in Japan increasing customer interaction
The example of Japan informs us about the usage of mobile email and mobile Internet sites. Mobile email (only packet fees apply) is a much cheaper way of communicating than SMS that dominates in the West (a fraction of 1p compared to 3p for an SMS). On the other hand, no premium charges can be associated with mobile email, and users change their email addresses often, making it more difficult totrack in databases than SMS.

Discovery and payments of event tickets on-line are common in both the UK and Japan. However, in Japan mobile ticket retailing is widespread: mobile phone browsing plays an important part in event discovery and in customer interaction. In Tokyo Tsutaya on-line (the largest CD and book retailer in Japan) boasts 8 million mobile members (and twice as many PC mail recipients). Tsutaya send out bimonthly generic offers to all their members (email and mobile mail). Rakuten Travel, Japan's no 1 travel and hotel web retailer, use dynamic pricing offers mostly as member benefit. The UK model of offering discounts is interesting to Japanese observers, as institutional pressure makes discounting a sensitive subject. Web ticket firms in Japan compete with larger and over-the-counter competitors PIA and Lawson Ticket. For the largest web ticket reseller in Japan, up to 30% of bookings are done via mobile, but for certain genres like concert tickets, it's as high as 50%. In the UK the comparable numbers are much smaller. There are two major reasons for Europe's lag (including the leading market, the UK): a) the mobile phone is not yet mature as an e-commerce tool and b) in Japan pre-booked tickets without deposit can be picked up in a nationwide convenience store network.

VII. Conclusion and recommendations: implications for fostering innovation

A rigorous understanding of business models can be the means to identify where innovation borderlands lie. The next step is to measure the innovative capacity of these regions of activity, and especially to consider the temporal nature of their changing utility. Outcomes

are best seen in the effect innovative activities have in changing those boundaries, either with the introduction of new goods or services, or in new interrelations among elements within the practice of business. It is there that we see the real effect of organizational transformation.

1) Routine description, analysis and monitoring of TCS boundaries internally and with linked bodies. We recommend that TCS conduct a boundaries audit "internally" initially with a view to assessing how transactions, both contractual and communicative, occur between TCS Innovations centres and units, and subsequently between those units and business divisions. This might later be generalized to the broader Tata family of businesses so that interactions between them might be seen in the light of potential innovative borderlands. We would recommend the application of the graphical and analysis approach outlined in this report, complete with an initial historical sketch of differing business relations over time in order to see the extent to which such boundaries are changing in location and character.

2) Conduct an analysis of boundaries with TCS Innovations partners. By extending the analysis to the companies that are formally engaged in partnerships with TCS, the arrangements can go beyond specific contractual agreements and occasional workshops into a more fluid set of problem defining and problem solving relationships. TCS Innovations would be able to regard their broader ecosystem of relationships as one where innovative capacity is charted and monitored, demonstrating the potential viability of enhanced relations, or the need to encourage better interaction for the purposes of fostering innovation.

3) Provide training to TCS consultants to conduct such analysis for clients. This approach, when refined and systematized, could become an element of the "toolkit" of analytical procedures applied by TCS to consulting clients to assess and assist in maximizing innovative capacities. By codifying the approach into a handbook or set of guidelines, consultants could be trained in the approach and shown how to elicit appropriate evidence about boundaries and borderlands and assess to what extent they might be living up to their potential.

4) Assessing external factors contributing to innovation, including regulatory regimes, incentive schemes, legal environments, etc. Regulations, tax systems, competition law, property rights legislation, etc. all have direct effects upon innovative capacity and behaviour. We recommend that these be systematically analyzed at the micro-level to assess the particular conditions under which businesses operate. By using our approach to chart comparisons between systems and changes in interrelationships, we can provide the framework by which alternative approaches can be assessed. We could demonstrate, for example, why some states and municipalities are better able to foster innovative behaviours than others, and what effect that has had upon business behaviour over time.

We believe that each of these recommendations can enhance the business of TCS Innovations by providing new and more effective tools to foster innovation, by offering new services to clients, and by offering strong arguments to contribute to policy development in support of innovation. We believe that this will increase the capacity of TCS to demonstrate its thought leadership in innovation while at the same time providing revenue generating tools and business-enhancing managerial guidance.

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