DIGITAL TRANSFORMATION
In the past, media and technology industries operated through specialized value chains with clearly defined boundaries. Mobile phones were used to make simple voice calls, Walkmans were used to play cassette tapes, and computers existed mainly to crunch data. But new technologies have made it possible to convert different kinds of content – a radio programme, a book, a magazine, a song, a phone call – into digital data; in digital terms, there is little difference between them. At the same time, the Internet and other communication networks based on Internet protocol have made it possible to distribute this digitized content in cost-effective and ubiquitous ways.

The extent and nature of these changes and their consequent strategic implications remain substantially misunderstood. While some studies have been made, they have mainly had an industry-specific focus, with the consequent limitation of overlooking the systemic effect of ongoing transformations. In order to address this limitation, we researched current transformations in media, telecommunications and technology companies and distilled three specific trends – digital interactions, digital distribution and ubiquitous digital reach. We also identified the strategic priorities to seize these trends.

Increasing digital interaction
The uptake of digital technologies, and of broadband in particular, is changing the ways in which people interact and consume content. Increasing interactivity – as opposed to broadcasting – means that people will have more opportunities to interact with the content and create it, eliminate it, consume it, when and how they want. The first manifestations of these trends are the exponential rise of search for content, for example, the rise of Web searches; the explosion of blogging, to around 200 million globally; and social networking. In the analogue world, value capture for content producers was largely a function of production, distribution and retail scarcity; and it was extremely difficult for small-scale content producers to break into mainstream channels such as cinema and television. In the new digital world, however, production technologies have become increasingly affordable, and the barriers to content distribution and retailing have been driven down by the emergence of open content aggregators and micromedia platforms such as YouTube and MySpace.
There has been a shift towards the democratization of content production as digital technologies have heralded an explosion of user-generated or amateur content in recent years, due to a shift in the economics of production and distribution. The competitive priority here is to become the trusted gateway through which users interact with content. By becoming the trusted interaction gateway, companies will have a privileged route to present and sell their products and services as well as to exploit advertising revenues. This interaction gateway could have different forms such as a trusted brand, a digital device, or an Internet portal. Different players, coming from different capability spaces, are battling to achieve this goal.

For content producers, digital interactions are particularly relevant. Content producers face the challenge of protecting their content while maximizing customers’ attention. While the growth of user-generated content is important, it does not provide a serious threat to premium services that require content accuracy and timeliness. Consider, for instance, the Wall Street Journal and the Financial Times, both highly respected providers of financial news that run successful online subscription services despite the abundant supply of free news. Content producers are strengthening the value of their brand to achieve the goal of becoming a trusted provider of information. Rupert Murdoch has set brand management as the next key strategic objective for the Wall Street Journal, which he has recently acquired. Other content producers are trying to leverage the value of their brands to convince people to accept their digital receiver as the key digital gateway into their homes – this is, for instance, BSkyB’s strategy. Content producers face tough competition on both strategies from companies that are trying to achieve the same strategic goal starting from different capability space.

Device manufacturers have the advantage of manufacturing devices that are tangible; they are trying to leverage this visibility to obtain a competitive advantage. Device convergence opens other opportunities for differentiation for these companies, too. As of end-2006, there were already more music-enabled Nokia and Sony Ericsson phones than there were Apple iPods. Moreover, there were more Nokia camera-phones than digital cameras from any other manufacturer. While the interfaces between content and communication layers remain sub-optimal, there is an opportunity for device manufacturers to optimize devices and user interfaces for a superior customer experience. If the device brand is strong enough or the experience unique enough, there is the possibility to appropriate value from other parts of the value chain – witness Blackberry’s success in being first to market with a push-email device, and Apple’s success in negotiating revenue share with operators launching its iPhone product.

Providers of access to digital content are trying to set their portals as the trustworthy gateway to content. Consider, for instance, Google’s increasing attention to branding and to providing more services (maps, emails, videos) to deliver on this strategy. Telecommunications network operators and handset manufacturers are also trying to break into the Web portal space to provide a better digital experience. Nokia, for instance, with the Ovi portal, is rapidly transitioning from telecommunications to integrated communication-content access. Digital technology developers are also attempting to establish their digital boxes as trusted gateways. Motorola and Cisco, for example, are placing their bets on IP-based boxes that will allow families to interact with digital content.

The attempt by some companies in the technology capability space to become providers of access to digital content in order to reinforce their digital box strategy (for example, BT’s Vision portal) seems unlikely to be successful given their limited knowledge of the content delivery capability space. Indeed, as standards drive ongoing separation of the network and services layers, the viability of converged digital portals might be short-lived – just as the portals of Internet service providers such as AOL withered in the face of technological standards and the rise of the search engine.

Controlling digital distribution

Until recently, a news item published in a newspaper could be accessed only in the newspaper’s printed editions. The New York Times, for instance, controlled both the news it published and the outlet in which it was published. Now, the same piece of news can be accessed in several ways including Websites or mobile phones. The diffusion of digital technologies and of the Internet, by increasing both

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the number of channels through which content can be distributed and the number of devices through which content can be accessed, poses opportunities and threats to all digital players. The first challenge here is to establish control of the digital communication channels.

Telecommunication network operators – for example, operators of mobile, broadband and satellite networks – are clearly positioned to pursue this goal; however, the risk of being commoditized is high. New technologies evolve at a fast pace and challenge existing technologies: for example, 2G and 3G mobile communication networks are threatened by Wi-Fi and Wi-Max technologies. It is likely that most telecommunication network operators will reach a level of service that is acceptable to customers in the next two to three years. In Hong Kong, landlines are already offered for free, and telecommunications network operators appropriate value by offering added services and by forming partnerships with mobile operators or mobile content producers. Yet, in the short term, there is a window of opportunity to differentiate on bandwidth, since for many media applications the size of the content is increasing faster than the bandwidth of established networks. A two-hour standard definition film takes 23 hours to download using a mobile 3G connection, and 66 minutes using a typical ADSL connection – but, for a high-definition film of the same length, the download times are 162 hours and 7.5 hours respectively. Innovation is rapid and brings the risk of a disruptive technology that might water down the value of the legacy networks. In the long term, differentiation will be driven by constant innovations.

Telecommunications network operators are trying to take control of the digital highways in three ways: first, by specializing in one network technology – for example, Tiscali, AOL, Pipex, 3UK; second, by converging previously separate networks – consider the change in Vodafone’s strategy from mobile-only operator to a multi-network company – and by achieving benefits of scale. Third, by seeking to commoditize both content and digital devices. Consider Orange and AOL, which are offering free laptops to subscribers to their broadband services. International expansion in emerging markets is an alternative strategy to exploit knowledge acquired in the mature markets of Europe and North America and to secure growth – witness Vodafone’s recent expansion into India through the acquisition of Hutchison Essar.

Confronting telecom operator strategy, digital device manufacturers are leveraging innovation to avoid the risk of being commoditized. Apple’s “cool” devices – iPhone, iPod, and Mac – are textbook examples. Digital technology developers are also trying to neutralize the prospect of powerful telecommunications network operators by taking control with their routers of the crossroads of the networks – for example, Cisco, Motorola, Microsoft – and by developing sophisticated system integration capabilities – for example, IBM, HP, Ericsson.

The diffusion of digital technologies also requires the creation of new digital value chains to provide services, such as financial transactions, to digital players. In other words, all the traditional analogue services are bound to become digital, and the business opportunities here are virtually endless. The second opportunity here is to establish and take control of these new value chains.

Among these opportunities, three are pre-eminent: to provide digital services to enable online advertising, for rights management and for online micro payments. The amount of advertising on digital channels is projected to increase dramatically, with the Financial Times estimating that the global online advertising market will reach $64 billion in 2010. The digitization of content has also made it more difficult to protect Intellectual Property, and new digital rights management systems (DRM) infrastructures are required to support firms in this key value appropriation activity. DRM systems will strongly influence the future business model of content producers.

Consider, for instance, the music industry in which the combined effect of decreasing DVD sales and increased music downloads is triggering profound strategic transformations in all the majors – Sony BMG, EMI, Universal Music. They are seriously reconsidering their core businesses, with at least one executive suggesting that his company become a talent developer rather than a CD seller (Rolf Schimdt-Holtz, CEO of Sony BMG). At the
same time, booming digital markets are triggering the need to have an infrastructure for (micro) online payments. Several companies coming from different capabilities spaces – such as banking, technology and software – are trying to seize this space. For instance, PayPal uses a customer's existing credit card and checking account to allow him or her to transfer money via email. Several other companies are trying to set standards to transfer money and make payments via mobile telephone – for example, Monetize of the UK.

Capitalizing on digital reach

As digital interconnectivity becomes virtually ubiquitous, it overcomes physical barriers and enables the possibility of reaching more people and building a network based on interests rather than on geographical location. This can open up niche markets, in addition to the mainstream ones whose customers are less homogeneous, and is often referred to as the “long tail”.

This trend has been under way in television broadcasting for some years. In the UK, mainstream broadcast stations represent more than 75 per cent of television consumption. The remaining consumption goes to more than 100 smaller specialized channels such as the Disney Channel and the History Channel. In the United States, households that can receive 96 TV channels (around the US national average) typically watch fewer than 15. For companies, the strategic imperative is twofold: to segment customers in new ways and to build network effect. Companies that find a new segment of consumers, often also called a community or network, will gain considerable power in relation to advertisers – proportional to the sociological homogeneity of their network and to the size of the network itself. Given their capabilities, content producers could appear to be the players best positioned to take advantage of this trend.

Indeed, all media companies are trying to establish some kind of network of users. In this direction, Web 2.0 technologies are enablers and facilitators for content producers. Telecommunication network operators are trying to build communities by leveraging their legacy with customers. Consider, for instance, the Apple iPod community or Nokia’s attempt to build a community around its services, such as the recently launched Ovi portal that claims to be the “next step in connecting people”. But building communities is not easy and igniting a network effect is even more challenging.

Network effect is a characteristic that causes a product or a service to have a value to a potential customer dependent on the number of other customers who own the product or are users of the service. In digital communities, the extent of the network effect tends to be overrated. While it is indisputable that larger communities could benefit individual users due to increased availability of content, it is also indisputable that switching costs are typically very low. In the attempt to increase these switching costs and protect their communities, all players engaging in this strategy are trying to create lock-in effects – that is, cognitive barriers to switch – by developing, for instance, an easy to use Website (Google) and/or by providing integrated, holistic services (for example, Google’s recent purchase of YouTube and News Corporation’s takeover of MySpace).

Digital technologies are pervasive; and media, telecommunications and technology companies have no choice but to leverage them. In the digital ecology, digital interactions, digital distribution and ubiquitous digital reach are opening up new business opportunities for incumbents as well as for entrepreneurial start-ups. Legacy “industry and firm’s capabilities” will play a key role in determining which companies will be effective and efficient in their digital strategies. Given these constraints, all market participants, from content producers to telecommunications network operators to digital technology developers to device manufacturers, will have to work much more closely in the emerging digital world. In this world, it will not be surprising if, at the same time, two companies will be competitors and allies, customers and suppliers.