1 Introduction and impact of digitisation on markets

Nobel prize-winning scientist Dr Arno Penzias marked his retirement in 1995 with a slim volume, *Harmony*, in which he reduced the history of technological development to three eras – making things (the industrial revolution), making things that work (the post-war quality revolution) and making things that work *with* other things, for which he chose the label 'harmony for the information' revolution.

Recognition of the digital economy came about in the late 1990s, emerging from Nicholas Negroponte's observation of a movement away from processing material (manufacturing economy) to processing bits (information economy) (Negroponte, 1995). The term 'digital economy' was popularised by Don Tapscott's book of the same name (Tapscott, 1997), principally to describe how the Internet would change society and business. Both Negroponte and Tapscott discussed how this new economy of connectivity and content enabled by technological developments would create very different opportunities for businesses and people to gather information, interact, communicate and collaborate.

The technologies that were evident two decades ago were by today's standards, a fairly primitive mix. The components have now been untangled and developed separately, but the dominant ambition throughout has been a struggle for 'interoperability'. We can now see how that spirit of technological interoperability impacts on markets across all sectors of the economy. Music is a case in point.

In 2011, digital music sales surpassed CD and record sales for the first time. Global revenues for record companies grew by an estimated 8 per cent to US$5.2 billion in 2011, with subscription services being the fastest expanding sector. According to the International Federation of the Phonographic Industry (IFPI), the number of users paying to subscribe to a music service increased 65 per cent in 2011 to 13.4 million globally, even while music piracy is still rampant (IFPI, 2012). Yet, overall music sales have dropped by half since companies saw record sales of music (through CDs) back in 1999.

With free music provision from Spotify, Internet radios, social networks and YouTube, today's music consumer has more choice of channels than ever before, and with rampant piracy, many have opted not to pay at all. The example of digital music usefully illustrates many aspects of the creative disruption that is now impacting the entire economy.

Music, as an offering, is in the more advanced stages of digitisation, to the extent that the change to a digitised form has impacted its nature, something I call *digital backwash*. Digital backwash is when the act of digitising an offering fundamentally requires a rethink of how the offering itself has to change. This is also the case with books, for example. When books became electronically available as e-books, it was clear that the book could be much more than its material version. You could now increase the font size if the print was too small; you could tap on a word and a little pop-up window would tell you its meaning. All of these new ways of interacting with the book came about as a result of digitising the material book. Similarly, in the case of music, its content can be changed and mixed in such a way that the medium and the message are almost functioning as one; take, for example, listening to music on MTV.

While many have analysed these cases from strategic and innovation perspectives, this book will take the perspective of the individual's use and value of offerings (such as photographs and music), and the changing nature of markets as a result of digitisation.

Since Theodore Levitt published *Marketing Myopia*, marketing folks have been promoting and marketing offerings based on the benefits a product gives to an individual. The way the marketing folks tell it is that it's not about drills, but the holes in the walls that customers want; not cars but transportation (and/or status); not TV but entertainment. This is of course true. People buy products and services not for the offerings themselves, but for what they can do for them.

Yet, while marketing diligently persuades you to buy for the benefits, the revenues derived from these offerings are *not aligned* to the benefits. You do not *pay* for holes in walls, for example, nor do you *pay* for each trip in your car or whenever you watch your TV. What you do pay for is ownership. Through ownership, you will obtain availability of the car, TV and drill for you to derive the benefits whenever you want them. In the past, the use of offerings could only be possible through ownership, even if it was conditional and temporal ownership such as with car leasing and renting DVDs or TVs.

As technological interoperability advances and markets refashion themselves to exploit new opportunities, it is now becoming increasingly evident that for some products at least, you may be able to get the usage benefits on demand and without even partial ownership. Instead, you could buy into the 'affordance' of a product, i.e., what it enables you to achieve.

EVOLUTION OF MUSIC TO MEDIA CONTENT AS A CASE STUDY

Music is a case in point. It used to be that you had to acquire a CD or a record before you could listen to it. That means you must buy, own, lease and then use. If you felt like listening to some classical music, for example, you would need to go to the shop to get a CD, if you didn't have one. If you turn that thought on its head, we buy almost everything before we use it, so we must imagine, project and plan the objects we wish to have before we use them. Not surprising that, except for variety in brands, we buy much of the same stuff over and over again because we know we need them and they work.

With digitisation, offerings such as music can now sit at 'virtual' locations such as in the cloud,[1] and you only need a device such as your computer or your mobile phone with broadband/Wi-Fi or 3G connection to access these locations and stream the music for you to listen to it. This brings the availability of music to wherever and whenever you want it,

[1] www.thecloud.net/. Accessed 15 November 2012.

i.e., *in context*, which is when the need is most salient, and *on demand*. You may still need to pay for it, but you can now do so whenever you want, rather than having to buy before or after the need arises. For an offering such as music, buying and using can collapse into the same context of time and space. This convergence between buy and use, enabled by digitisation, has seen four major market effects:

- **Serving the unserved market**. First, when buying and using are separated in time, a large part of potential demand is unrealised. Say you wish to listen to classical music and you do not have the CD. You are at home and so you might not buy it until later, when the moment of need has passed or been forgotten. The separation of time from when we buy to when we use means that needs are unfulfilled and they become latent. Latent needs create what I call the 'unserved market', or what economists would call 'latent demand'. This demand is invisible. After all, does McDonald's know how many people walk away when the queues are too long?
- While our latency does not manifest in demand for the firm, it also leaves us rather dissatisfied. When we do want something, we clearly only have access to the things we have bought. In a world of heady consumerism where much has been said about how we are spoilt for choice in terms of products and services, it is ironic that the only choice of coffee we have when we wake up in the morning is the one that is in our kitchen cupboard.
- **Choice of access and ownership**. The second impact of convergence is the possibility to gain use and benefits without ownership but just through access. Since music is now digitised, you could listen to it without owning it. You may still need to pay for it though – but through other means, e.g., you could stream music for free but be subjected to ads as in the case of Spotify. Digital access to music gives you the benefits wherever and whenever you want them, without a long separation of time between buy and use. Of course there will be many who still wish to own their music and you can often buy, own and use without a time separation as well. In fact, by

giving people a *choice* of ownership and access, the market expands. If access was cheaper than ownership, the needs of those who originally could not afford to buy CDs, and the rest of the unserved market, would be addressed.

- **New use contexts**. The third impact of convergence is the creation of new use contexts. Where previously music was just for your own listening pleasure, its availability wherever and whenever you want it has made it possible for music to be shared, shown or showcased in different ways for different reasons. Now you can use it to check lyrics, challenge your friends on the year it was released, or share your mood with others on a social network through your choice of song. Music is now not just for listening pleasure, but is also a resource for socialisation.
- **Change in the offering's content – beyond music**. Digitisation of music and its new use contexts has created a demand for audio content that is social, informational and even educational, wherever and whenever you wish to listen to it. This has spawned a market for creating new audio and video content. You can now have audio content to coach your running, and in combination with a GPS, get a guided tour of the city. Some of this content is professionally made but much of it is user-generated, such as mashups and ways to change and splice different types of music into a changed offering. In the UK in 2012, the Deputy Prime Minister, Nick Clegg's apology for a policy u-turn was remixed into a 'sorry song' that went viral. The 'sorry song' then became available on iTunes with purchases contributing to his nominated charity. The idea that no content is sacred, and the possibility of any audio content being combined with other types of content such as audio books and lectures suggests the entry of other industries, legal framework notwithstanding. Through digitisation, an iPod with a podcast could potentially disrupt the education industry. This trend is set to continue, challenging market boundaries of existing firms.

These four major market effects have served to grow the potential market of music into its general form, i.e., media content with a ready and willing market of media content users. I say 'potential' because not all of the media content currently being experienced or used is paid for in a direct way. Piracy aside, media content is often streamed 'free' through YouTube, last.fm and Spotify in exchange for ad views. Direct sales of content therefore account only for a fraction of the content accessed and experienced. Regardless of the challenges in monetising music use and experience, music sales as a whole increased between 3 January 2011 and 1 January 2012 by 6.9 per cent compared to the previous year.[2]

Not everyone buys into access as an offering though, and you can imagine why. Before it was fully digitised, the purchase of a CD meant unlimited access to the music purchased. No one could tell you whom you could lend it to, where you could keep it, who listened to it and how many times you could listen to it. Of course, it also meant that it could only be listened to in one context at a time (you could not lend it to someone and still have access to it, unless you illegally cloned it). With digitised virtual music becoming an accessible rather than an owned offering, music has liberated itself from its physical form and in doing so, become much more shareable. Music licensees, alarmed by the loss of revenue, have started to restrict such activities. By doing this, the market has divided itself into those who prefer ownership (and unlimited access) and those who could do without ownership, with a range of trade-off markets in between.

THE NEW BATTLEGROUND IN DIGITISATION

Offering digitised media content that is enjoyable and shareable, however, requires three further service provisions:

- Content must reach the customer through a medium from which the customer is able to listen, watch or interact: e.g., an iPod, a computer, a TV or a mobile phone.
- For content to be accessible in context, there must be connectivity.

[2] www.businesswire.com/news/home/20120105005547/en/Nielsen-Company-Billboard%E2%80%99s-2011-Music-Industry-Report. Accessed 23 November 2012.

- With content increasingly becoming a shareable resource, the platform for social connectivity to others is becoming a growing priority for media content users.

It is clear now that with greater connectivity between people and things, the biggest land grab for markets of the future is playing out in your living room, while you exercise at the gym, or live your life commuting to work, play and home. Digitisation can make widgets such as smartphones and tablets more personal than ever before if they are enabled by content and connectivity, to serve you better in context (see Figure 1.1). Or you could say that *content* becomes more personal in serving you, enabled by connectivity and widgets, depending on whose point of view is in the land grab.

The perspectives matter because each embodies the giants in each industry. In media, large corporations are competing with peta-bytes of user-generated content on YouTube. With such content, you can learn how to cook a Spanish omelette and repair your phone, often for free. This competes with industry stalwarts who are eager to charge for more formal and professionally created content.

The connectivity industry includes the big broadband providers, 3G and 4G, with near-field communication, fibre, auto-Ids and sensor

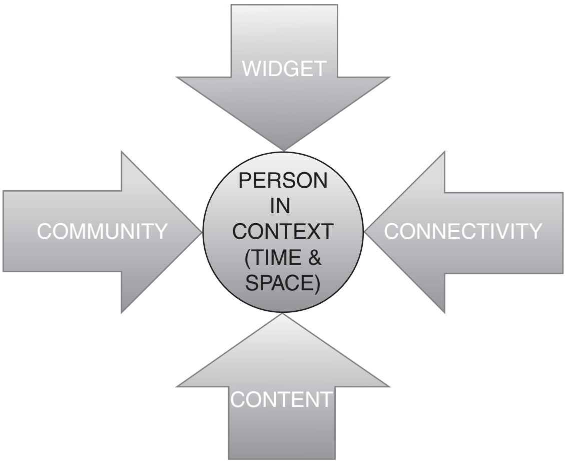

FIGURE 1.1: The future battleground for service in context

technologies all coming to play in the same space. The rise of social platforms such as Facebook, Instagram and Foursquare demonstrate that the social space also holds sizeable influence over the way we live our lives. And of course, we mustn't forget the manufacturers who are creating widgets, big and small, and which are increasingly looking to be connected – from cars, fridges, buildings, to a simple watch, bag and even tables, mirrors and household furniture.

All these major industries are now playing in the new battleground of *service in context* – the context in which you go to work, watch your programmes, look after your children and even make your tea or coffee in the morning. This is because even if we are completely unique people, our actions and activities in the contexts of experiencing things (products) are often very similar across many people. I call these *contextual invariances* or *contextual archetypes*, and they are social contexts such as tea-making, commuting to work and keeping grandparents updated about their grandchild.

There are many perspectives and much more interoperability within these new blends of context archetypes. The personal context at the core of these new blends is a response to:

- the capacity of their connectivity;
- the functionality of their devices and networked services;
- the processing power and ease of use of available content and Applications (apps); and
- the impact on the way we live within various communities.

These contexts are rich in meaning and reveal how we want to live our lives. Greater visibility or awareness of these contextual archetypes would enable firms to design future offerings to serve you right within the time and space of these contexts. Yet, these contexts are 'messy', dynamic and may involve millions of interactions which makes it hard to understand and draw insights from.

If digitisation, and thus the ability to generate data out of contextual lives, is considered the 'new oil' as some have suggested, context is now the new oil field, with industries trying their best to control territories to drill for the new oil. Yet this new oil is elusive. Data can, at best, capture only part of our lived lives, e.g., the food we bought, perhaps even what we ate, how we travelled, the miles we ran, the photos we kept or the nuances of our interactions on social networks.

However, as devices and things become more able to measure how we live our lives, the picture becomes clearer, even to ourselves. Since these measurements and devices give us greater visibility of ourselves, they often enable us to change what we might normally do. If you knew that your knee problem was possibly related to the fact that you walk 2.5 km every day just within your home, you may decide to change the way you move around the house.

What this means is that every individual person can take advantage (or not) of all this new information to change or make their lives better, in a way that would better suit them. Yet, even while more of our lived lives are now visible and measurable, it raises the question of who holds that data and all the privacy issues related to it. Companies would like to have some of that data so that they can offer more services in context, but would we want them to?

Offerings that change the way we live our lives aren't at all new. We have been changing our lives quite a bit over time, such as choosing low-fat milk or wholemeal bread for a healthier lifestyle, but we've done so with less digital visibility because there wasn't much accessible data or information about us and how we live our lives. Much of these daily life changes come from adapting our lives around the stuff we acquire. And we have acquired quite a lot of it. Chris Techmire[3] who is aged over thirty and married with a son counted that his family has 3,377 items. That is a lot of stuff.

[3] www.simplefamilyfinance.com/experiments-in-frugality-1-final-update/. Accessed 15 November 2012.

Where do all these things come from? We bought many of them. Or someone else did and gave them to us. Somehow, somewhere along the way, that bag becomes important for holding things, this bottle for carrying water, that mug to drink coffee from, the pens to write with, the phone to receive text messages, the desk for writing on, the chair to sit on while writing on that desk, and the well-fitting clothes that make us comfortable.

As a result, it isn't surprising that our inventory is above 1,500 objects per person, without counting perishables such as food and drink. Human beings are clever, resourceful creatures. Each and every object we use has been acquired as a resource to help us solve a problem, and by doing so, potentially make our lives better. Every object therefore potentially fulfils a need. Every object is potentially a resource towards helping us achieve something we would otherwise not be able to do, or would perform poorly. Humans have become cleverer at solving problems with different offerings, at living our lives more efficiently and effectively. We are tooled and resourced up, empowered to do much more than we could ever achieve before. We also buy stuff because it is part of 'us' and our identity; it says something about who we are. We also waste much of what we buy, which is why buying efficiency is also a key driver to new markets.

Where is all this going and what does the future hold? Are our lives all about accumulating even more stuff? You might have noticed that I said every object that we buy is *potentially* a resource. I say 'potential' because even if the object has been purchased and it exists in your home or office, it does not mean it immediately fulfils a need. You might *think* it does, but to actually do so, it must be *used* or *experienced*. This is not a trivial point. We have many objects we have bought but do not use because (a) we lent them to someone, (b) we forgot where we put them, or (c) we are in one place and the objects are somewhere else (think of the umbrella you left at home when it rains while you are out).

This brings us back to the point I made earlier, that owning something is not enough. That object must be accessible as and when