

# Knowledge factories: from iPhones to iHotels

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## *How marketing is being shaped by new technologies*

### Review

Although not known for his contribution to marketing research, it is undeniable that Sir Francis Bacon was on to something when he observed some 400 years ago that, “knowledge is power”. Firms across the globe have, of course, realized this and made marketing a keystone in their operations. But the advent of new technologies has enabled a heightened ability to channel consumer feedback into the product or service development process. Capturing so much data, in any meaningful way, has been the real challenge, beyond the filling of huge databases with consumer information from loyalty cards, for example. Approaching marketing in a more qualitative way while utilizing this new technology has been a severe test of the marketing functions of many corporations.

### iKnowledge

With so much knowledge at people’s fingertips – from iPhones and BlackBerrys to web-enabled laptops and iPads – it is perhaps surprising that organizations have yet to successfully harness them for themselves. There have, of course, been several great examples of collaboration to create knowledge, such as Wikipedia, but few have actually been able to sell anything for something recognizable as a profit.

In their article “Customer managed knowledge factories”, Moon and Desouza (2010) argue that what could evolve from current customer relationship management systems and knowledge management techniques is a “customer managed knowledge factory”. It sounds rather Orwellian, however the idea actually infers the opposite kind of idea. Rather than trying to control users and their input, the knowledge factories are created and developed by external stakeholders with just the minimum amount of supervision from the relevant company.

The web site YouTube is perhaps the best example of this, where hundreds of millions of items of user-generated content have been uploaded for everyone else’s entertainment, with the only restrictions placed on adult-themed content and size of files. Apple’s App Store has led to consumers developing over 200,000 applications for iPhones and iPods, and while Apple has been criticized for the amount of control it places over these developers – for example not allowing any pornographic apps or technologies such as Flash – it has engaged the thousands of developers to a much greater degree by effectively using them as hired hands to create all their software.

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### Factory conditions

Enabling software developers to work for Apple, and offering them generous terms to do so, has created a huge workforce for Apple that is dynamic, creative and able to keep them ahead of competitors such as RIM (BlackBerry), Nokia and Google in the guise of their operating system Android. Rather than the horror vision of a dystopian future, the knowledge workers sit at home in front of brushed aluminum iMacs sipping espresso.

However such collaboration has more profound consequences in less privileged arenas. The Global Text Project (GTP) was formed to enable the very poor in developing nations to access the latest research. One way to do this was to conceive of a textbook that would be written and developed by students across developing countries for other students who, like themselves, could never afford a second-hand or even third-hand book. Collaborating and creating chapters as they themselves learned, the numerous authors were able to publish an electronic book for a market they understood intimately.

### Deeper understanding

Whether they are software developers or student authors, both sets of collaborators are both consumers and employees in the widest sense, and therefore have a unique perspective on the organization or project they are working for. Part of the knowledge factory process is to harness this knowledge, as well as labor, in order to provide a strong quality of consumer feedback. Another way this is possible is to utilize more traditional marketing techniques to discover what consumers think about one product or another, however often the results are inconclusive or misleading.

In their article “Consumers’ intention to buy private label brands revisited”, Walsh and Mitchell (2010) look again at this process, using the preference or otherwise of consumers for cheaper, supermarket-branded goods against the more well known brands.

The question posed is how can retailers gain a competitive advantage over competitors by using private label brands (PLBs)? The leveraging of customer knowledge will be key to this, as retailers will need to know intimately their consumers and their buying habits in order to satisfy their needs for PLBs – if of course there is one. While there is evidence to suggest that sales of PLBs are growing faster than many leading brands, and moreover growing market share, there is a suspicion that the appetite for these is finite, and may indeed be saturated with alternatives to every brand imaginable in all major grocery outlets. Indeed, the UK retailer Marks & Spencer, famous for stocking only its own-branded items, in 2010 started selling leading brand alternatives, turning the original question posed by Walsh and Mitchell on its head.

### Ghost in the machine

While the sales stats have been pored over by retailers and researchers alike, one area the authors identify as being poorly served is the quest to discover what consumers think about PLBs before they intend to purchase anything. Their intention to buy a PLB can be regarded as a state in itself, and knowledge of a customer base’s predisposition in this area will be critical to any retailer seeking to secure competitive advantage in this area.

What Walsh and Mitchell found was that there was still a strong demand for PLB, and indeed the luxury end of this segment was yet to be fully satisfied. Exploiting other niche product areas such as environmentally friendly products or dietary aware products also have a way to go according to the research. The only warning is that while demand looks strong, PLBs still have to offer the traditional strengths of quality at low cost, and if this is lost so will the competitive advantage they offer an innovative retailer.

### Room service

Deeper knowledge of customers' needs, then, can help leverage new competitive advantages and develop ignored niches. However will this work in all business environments? We have seen how new ideas in knowledge management can bring an organization closer to their audience by using their labor or understanding their values and predispositions to certain classes of products, but would this work in the service sector? Hotels seek to satisfy different clienteles with room rates, service offers, comfort levels and market positioning, but could they take this even further?

In their study "Technology revenue management system for customer groups in hotels", Guadix *et al.* (2010) look at how new technology can aid hotels introduce a "decision support revenue management system" which uses incredibly powerful forecasting systems and algorithms to maximize the understanding of guest behaviors and their identifiable "customer groups". A decision system is employed which includes four key features:

1. Demand forecasting from past data on individuals and seasonal demand in order to fully understand as many fluctuations and variables as possible
2. Optimal room distribution systems, which can, for example, set room rates at maximal prices depending on demand levels
3. Room inventory control, which includes arrival and room reservation systems to aid the designation of rooms for individual customers
4. Real assignments will finally allow room designations to be overridden if necessary at the discretion of managers in terms of group bookings or other exceptions

The authors show that the development of such a complex and interlinked system would pay dividends given the right amount of – and right kind of – IT investment in a hotel organization, and would probably make more sense in a chain of large hotels rather than a few destinations or single operation. The authors recognize that while this takes knowledge management to greater depths, there are still limitations in second-guessing people's habits and preferences, however they believe there is much more that can be done in this area to properly capture information and allow greater knowledge transfer and creation in the service industry context.

### What is knowledge?

The more information companies have at their disposal, the greater the challenge is for them to utilize it more effectively. As we have seen, there are some high profile examples of tech firms mobilizing their consumers like a large standing army, prepared to pitch in at any time, as well as retailers and service providers having the potential to use knowledge and technology in harness to develop competitive advantage over their competitors. But how

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likely are these innovations in knowledge management likely to filter down to SMEs and become business as usual?

Although Apple and the iPhone are perhaps the most quoted example of business innovation and success on many levels, in the realm of knowledge factories they are perhaps unique in how powerful the idea of the App Store has been in empowering users to actually create the company's own products. While it is evident many lessons can be learned in this type of knowledge management, the real challenge will be if anyone can replicate the sheer scale of its development.

### Comment

Knowledge management is an area intimately related to the development of new technologies. While the human psyche and behavior is still massively difficult to understand, we have seen in the articles reviewed here that the ability to shape consumers' responses (Apple) and pre-empt their buying behavior (private label brands and hotels) can potentially pay dividends in establishing the all-important competitive advantage. In each case, market testing of such strategies will prove crucial, and they provide sound platforms for firms to test the water and take their knowledge management practices a step further.

#### Keywords:

Innovation,  
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