

Insights: Technology Convergence

Exceeding Your Customers' Rising Expectations

Consumer expectations continue to rise. The demand for products that perform multiple functions makes those that provide only singular needs now seem ordinary and uninspiring. Technology Convergence is an approach that delivers the higher value customers are demanding – in a timely and cost effective manner.

Rising Expectations

Few products have seen such high growth in expectations than devices that connect via wifi to the internet. While this trend is not new, it continues to encompass more and more products that in the past seemed unglamorous. According to IMS Research, "The number of devices shipping with Wi-Fi inside is forecast to expand to 2.6 billion annually by 2016, as the Internet of things becomes an even more prolific part of consumer lifestyles and business operations."

Consider the case of the household thermostat. Rather than exist as a standalone product, the new expectation demands a smart device that can be remotely controlled and even learn the user's behavior and preferences.

The Nest Thermostat has created a new spin on an old product. Low cost (\$1) wifi chipsets, prevalence of wifi in homes, wifi capability of mobile devices, elegant designs, and simple user interfaces (think iPod) – have provided new levels of energy efficiency, flexibility, and convenience.



Consider the possibilities for companies that recognize the opportunity to expand the functionality of products. How about a power toothbrush that uses wifi technology to create new business models and increase user compliance?

Oral Care Device Concept that provides a wifi link to transmit tooth decay and gum diagnostic data to Dentists, and encourages users to follow a prescribed brushing regimen. The device can also communicate with suppliers of toothpaste or other consumables to trigger reorder, and establish a reward incentive system for good behavior.



These increasing value expectations provides an opportunity freshen, extend, and differentiate flagging product by increasing incremental value along important dimensions (convenience, efficacy) – where the prevailing products and technologies are tapped out.

Open Innovation and Technology Roadmaps Provide Part of the Solution

In each case above, the key to success lies in Technology Convergence – bringing together technologies from areas outside the expertise or capability of the product company. Two approaches have gained recognition in attempting to bring this idea to fruition, and each play a role in the overall larger concept of Technology Convergence.

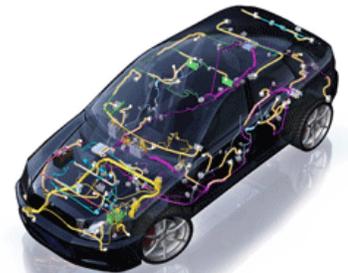
Open Innovation (OI) was formalized in Chesbrough's groundbreaking 2003 book *Open Innovation*. Chesbrough describes the benefits gained by successful companies, such as Proctor & Gamble, in bringing new technologies from external sources into their products. The value of OI is clear, but the

implementation has many challenges – often preventing companies from realizing the full potential. BIC has invested significant effort to make Open Innovation work in practice, and has demonstrated the power of this approach with several major firms.

Technology Roadmapping is an important tool when a specific technology is identified. Efforts are made to characterize “technology readiness” or “technology insertion points” to intersect with the development of products. Taken alone, this is important information to have. Unfortunately, the same roadmap is likely to be available to competitors as well – allowing companies to keep pace, but not exceed their competition. Technology Roadmapping is a necessary, but not sufficient, tool to meet future expectations.

The Road to Technology Convergence

Technology Convergence integrates the benefits of both Open Innovation (i.e. “I don’t know what technologies are available”) and Technology Roadmapping (i.e. “I don’t know when technologies will be available”). A good historical example of Technology Convergence is the great advances in automobiles with the advent of inexpensive, reliable electronics, sensors, and data busses. Add to that the capabilities of internet/cellular connectivity, and an entirely new automotive paradigm was created – where the total is measurably greater than the sum of the parts. Open Innovation provided the connection for auto companies to access new technologies outside their capabilities, and Technology Roadmapping provided the timing for the critical pieces to come together.



Modern Automobiles – greater efficiency, higher comfort and convenience, lower manufacturing cost, greater manufacturing flexibility, and higher safety - are all made possible by the convergence of electronics, communication, and mechanical systems.



Technology Convergence is more than an idea to BIC – it is something we put into practice for clients seeking new solutions to old problems, or new solutions to new problems. By integrating the best practices of Open Innovation and Technology Roadmapping, firms can achieve predictable breakthrough products. A more detailed discussion of BIC’s approach will be presented in the next article – *Leveraging Seed Technologies*.