

# Strategic Analysis Tools for High tech Marketing

## Abstract

High Tech Marketing is characterized by high levels of technical and market uncertainties, rapidly declining prices, collapsing markets and shortening product life cycles. Here, we will review a portfolio of contemporary strategic analysis tools that have been used effectively in developing high tech marketing strategies. These tools are:

1. Boston Consulting Group's (BCG) Portfolio Matrix
2. Technology Adoption Life Cycle
3. Whole Product Concept
4. Disruptive Technologies Mapping

## Boston Consulting Group's (BCG) Portfolio Matrix

This matrix has two controlling aspects namely relative market share (relative to the competition) and market growth. To use this tool, you would look at each individual product in your portfolio and place it into the matrix. You can then plot the products of your rivals to give relative market share.

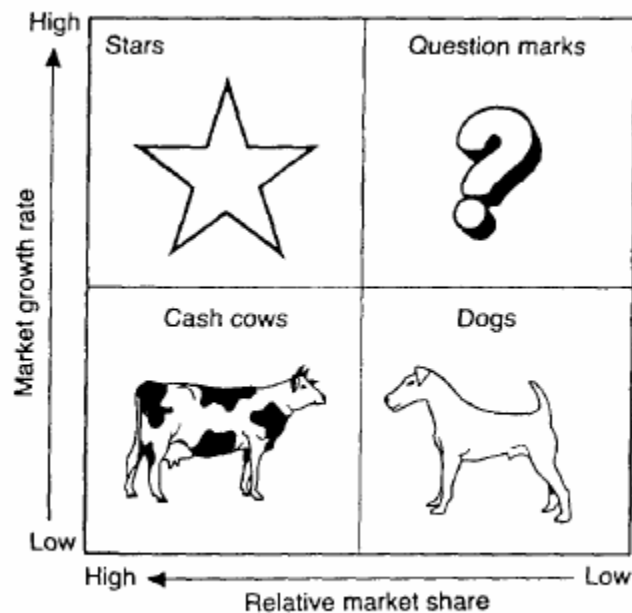


Fig. 1. BCG Portfolio Matrix

Each cell is broadly categorized as follows:

**QUESTION MARKS:** These are products with a low share of a potentially high growth market. They consume resources and initially have low profit margins. They have the potential to become Stars  
**STARS:** These are products that are in high growth markets with a relatively high share of that market. Stars tend to generate high amounts of income. Keep and build your stars.

**CASH COWS:** These are products with high share of a slow growth market. Cash Cows generate more than is invested in them. So keep them in your portfolio as long as they generate appreciable cash flow and maintain market share.

**DOGS:** These are products with a low share of a low growth market. They do not generate cash for the company, they tend to absorb it. Discontinue these products!

The goal is to look for some kind of balance within your portfolio. Try not to have any Dogs. Cash Cows, Question Marks and Stars need to be kept in a kind of equilibrium. The funds generated by your Cash Cows are used to turn Question Marks into Stars, which may eventually become Cash Cows. Some of the Question Marks will become Dogs, and this means that you will need a larger contribution from the successful products to compensate for the failure.

### The Technology Adoption Life Cycle Landscape

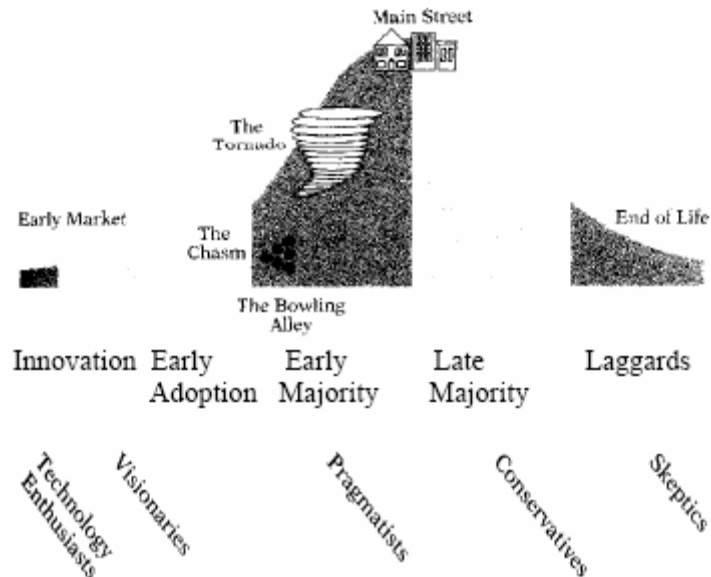
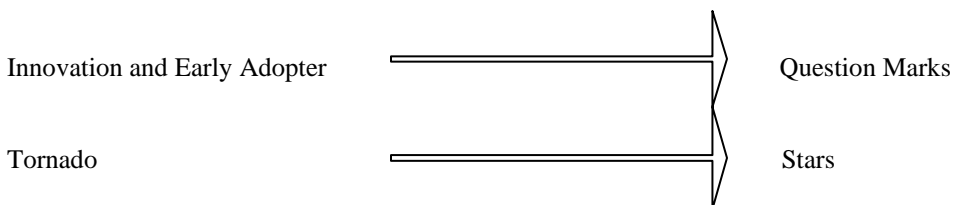
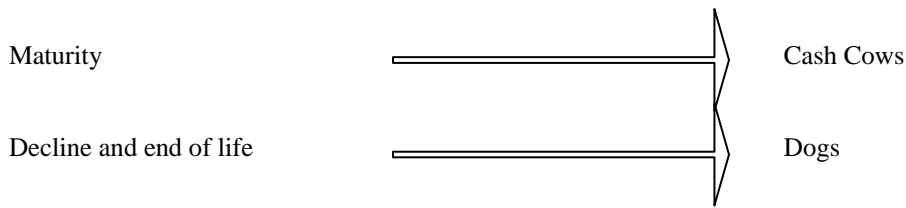


Figure 2. The Technology Adoption Lifecycle

This is a useful tool to determine where in the lifecycle the technology (or product) is and the impact of this position on the marketing strategy. The Technology Adoption Lifecycle breaks down product and market evolution into consecutive phases of development: Innovation, Early Adoption, Chasm, Tornado, (or high growth), Maturity, Decline and End of Life. These stages correspond to the four quadrants of the BCG matrix as follows:





A basic marketing model based on discontinuous innovations, relating to psychographic buying habits has been formed which has the following divisions:

**TECHNOLOGY ENTHUSIASTS:** to these individuals, technology is their life. Any new high technology product is good, and they will do anything they can to help the vendor get the product into the marketplace. They actually dominate the Innovation stage.

**EARLY ADOPTERS ( OR VISIONARIES):** They are non-technology individuals. They rely on their intuition and vision when making buying decisions, sometimes referring to the technology enthusiasts, and are key to opening up high-tech market segments. These individuals fit into the Early Adoption stage.

**PRAGMATISTS:** These individuals like to wait until the market is shaken out, giving them the ability to transact business standards, right choices and safe purchases. Because there are so many people in this segment (roughly 1/3 of the adoption life cycle), securing their business is critical to substantial growth and profits.

**CONSERVATIVES:** These individuals do what the pragmatists do, but essentially do it later. They want products that 'just work' and are 'plug n play'. These individuals dominate the Maturity and Decline stages.

**SKEPTICS:** These are individuals who simply don't want anything to do with technology and therefore not a worthy audience to pursue.

The above model depicts marketing success by winning one segment after another, with each captured segment acting as a reference base for the segment following. There are gaps between all of the segments, with the largest and most difficult gap to overcome being 'The Chasm' between the early adopters and the pragmatists.

These two groups do not have much in common. The early adopters like making decisions by themselves that do not depict the norm. The pragmatists, on the other hand, want to communicate with others and put together a good decision. The key to crossing the chasm was derived by studying the fundamental differences between the last early adopter and the first pragmatist. Geoff Moore's solution for making the transition is to focus on a 'beachhead' and deliver a total solution to one of the niche markets as quickly as possible.

## The Whole Product Concept

The Whole Product Concept is a holistic approach to product definition and development. It is graphically depicted in Figure 3, as a set of concentric circles representing the Generic Product, Expected Product, Augmented Product and the Potential Product. It can be used to analyze a Product Marketing Strategy with reference to the generic technical features, competition, customer expectations and the 3C's i.e. customer's customer, customer's competitor and customer's cost structure.

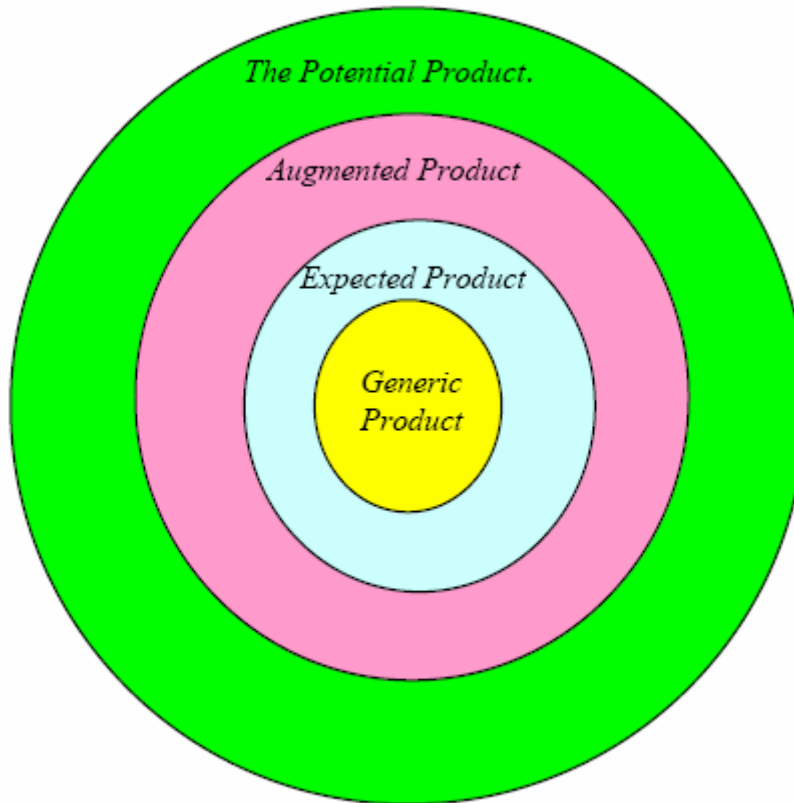


Figure 3. The Whole Product Concept

- The Generic Product in the center represents the basic innovative product or technology that is needed for market participation e.g. Integrated Circuits for the semiconductor industry.
- The Expected Product represents the customer's minimal conditions and is determined by competitors. e.g. Product Data sheets for Integrated Circuits.
- The Augmented Product involves product features and attributes that exceed the normal buyer expectations and the competitor offerings, by augmenting the product with features that the customer has never thought about. eg. Application software for microprocessors.
- The Potential Product involves everything that can be done to attract and hold customers by taking into consideration the Customer's customer, competitor and cost structure. eg. 'Intel Inside' campaign.

### **Linking The Technology Adoption Lifecycle Landscape with the Whole Product Concept**

The following figure illustrates the link between the Technology Adoption Lifecycle Landscape with the Whole Product concept.

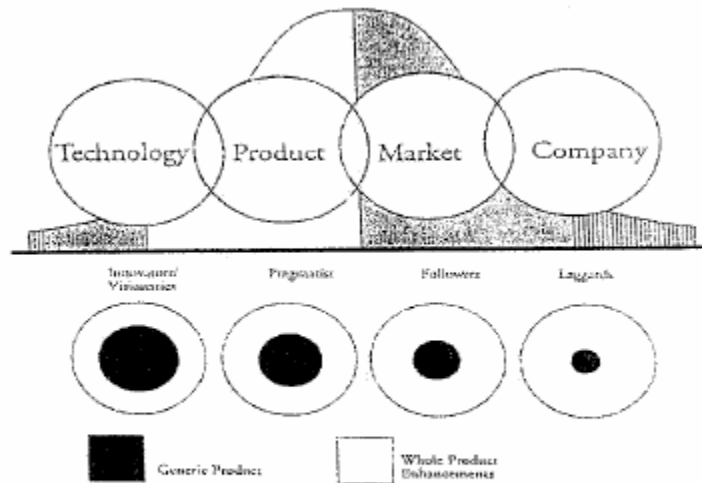


Figure 4. Relationship Between Technology Adoption Lifecycle and Whole Product Concept

### Disruptive Technology Mapping

Disruptive Technologies are seemingly irrelevant, inferior technologies which are developed independent of the dominant incumbent sustaining technologies. When a disruptive technology meets the performance demands of mainstream customers, the customers will switch to it even if it is inferior to the sustaining technology.

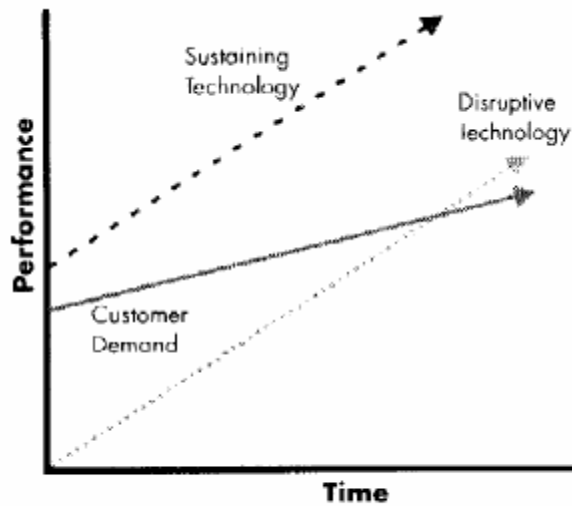


Figure 5. Disruptive Technology Mapping

Typically, the disruptive technologies that damage an established company have three important characteristics:

- They present new benefits that enable new applications for new customers.
- Their initial performance doesn't meet the demands of current customers.
- Their performance is improving rapidly.

In order to successfully market and develop new technologies, marketing strategists must be able to:

- Determine if the technology is sustaining or disruptive
- Define the strategic significance of the disruptive technology
- Locate an initial market for the disruptive technology
- Protect it from business processes geared to serve established customers
- Maintain the disruptive technology's distance from the central organization over time

## Using Disruptive Technologies Concept for Strategic Marketing

Mapping future customer demands over time (typically 5 years) provides a standard for evaluating disruptive technologies. Plot a simple graph of the product performance as it is defined in mainstream markets on the vertical axis versus time on the horizontal axis. First plot the sustaining technology performance curve. Next draw a line depicting the level of performance and the trajectory of performance improvement that customers have historically enjoyed and are likely to expect in the future. Then locate the initial performance level of the new technology. If the technology is disruptive, the point will lie far below the performance demanded by the current customers. The slopes of the curves of the customer demand and the disruptive technology are also very critical. If knowledgeable technologists believe that the new technology might progress faster than the market's demand for performance improvement, then that technology, which does not meet the customers' needs today, may very well address them tomorrow. The new technology, therefore, is strategically critical.

## Conclusions

In this paper we have reviewed four strategic analysis tools that are becoming increasingly important in developing high tech product marketing strategies. The Whole Product Concept provides a concise, holistic tool linking the technical features of a product with market considerations to develop a successful product strategy. While the BCG Model, The Technology Adoption Lifecycle and the Whole Product Concept are interrelated and focus on evolutionary product and technology cycles, Disruptive Technologies can result in a product going from the Question Mark quadrant (innovation, early adopter stage) to a Dog quadrant (decline, end of life stage) by never making its way out of the chasm. Disruptive Technologies Mapping enables the marketing strategist to be cognizant and anticipative of these seemingly inferior technologies that may meet the demands of mainstream customers and displace the incumbent sustaining technologies. Hence it is critically important to use these contemporary tools along with conventional methods, when developing marketing strategies for innovative high tech products and technologies.