



Bumpy Road Ahead for Data Warehousing Market

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*As a technology, Data Warehousing (DW) has been successful over the past decade in establishing itself as an essential part of enterprise systems. The market for this technology has, likewise, grown large and diverse. However, major changes are likely over the coming year. What will be these changes? And, what will be the forces that cause these changes? This whitepaper explores these questions using the concepts of Clayton Christensen, a professor at Harvard Business School who wrote the books *Innovator's Dilemma* and *Innovator's Solution*.*

Every successful technology sows the seeds of its own demise. Transistors and jet engines are successful technologies and have faded into their respective infrastructures. Who today uses the phrases “transistor radio” or “jet airplanes”? Likewise, data warehousing has been a successful technology and is starting to fade into the infrastructure of enterprise systems. Instead of focusing on database design or data extraction, companies are now focusing on delivering better decision support across their entire organization. But realize that the data warehouse is still essential to this goal, just like that jet engine is critical for your next business trip.

Clayton Christensen, a professor at Harvard Business School, has described the maturing of technologies and their impacts on the marketplace from an insightful perspective.¹ He predicts that a company leveraging a successful technology will sustain a continuous stream of innovations as dictated by their most demanding customers. Along with its competitors, this company will establish the standard and be the mainstream of the market. This is the traditional **sustaining strategy** that relies on competitive advantage through continual innovation.

Let's apply Christensen's concepts to the Data Warehousing (DW) market. Figure 1 shows the maturing of this market from the early 1990's. The vertical axis is functionality (i.e., performance or capability) of the DW products. In the early years, customers had to create most of their systems by internal development since DW products were often immature and inadequate. This

¹ C.M. Christensen & M.E. Raynor, *The Innovator's Solution: Creating and Sustaining Successful Growth*, Harvard Business School Press, September, 2003, <http://www.theinnovatorssolution.com/>. Also see <http://www.claytonchristensen.com/> for his other publications.

situation is shown at Point A around 1992 where available products had functionality less than the requirements of the market.

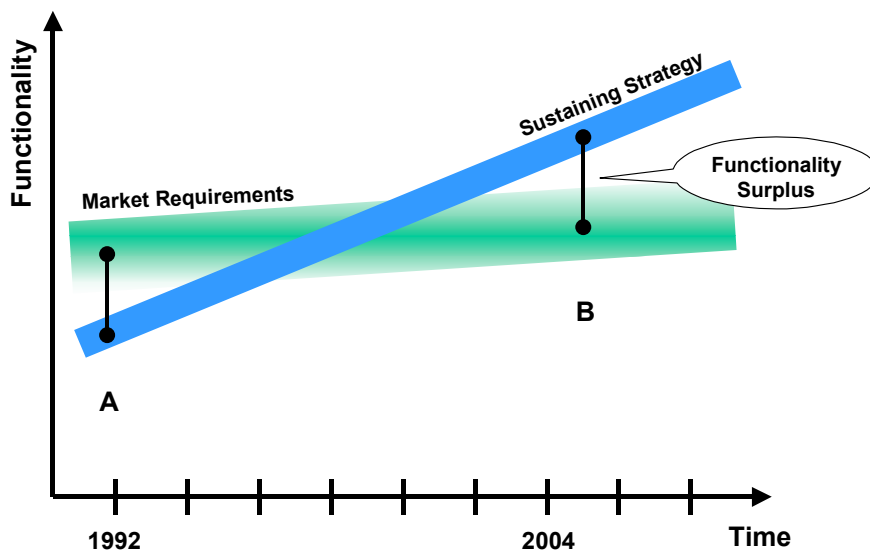


Figure 1 - Sustaining Strategy

Then for a period of over a decade, customer requirements and product functionality were in synch, and the DW market blossomed into a mainstream market of \$8 billion dollars.² Data warehousing was transformed from a novelty by a few pioneers to an essential element of every enterprise system.

As technology matures, product innovation, however, often outpaces the requirements of customers. This situation is shown at Point B as a surplus of DW functionality. I believe this describes the current market. This illustrates the 'innovator's dilemma' since continuous innovation sows the seeds for the market's demise. Most customers do not complain because pricing stays constant over this period and capabilities increase significantly. The DW market will remain stable unless other forces disrupt it.

According to Christensen, there are two possible types of disruptive forces: Low-End and New-Market.

Low-End Disruption

Low-end disruption is direct competition from products with reduced functionality and reduced prices, utilizing a different technology. As shown in Figure 2, these challengers will initially be discounted and have little impact on the main market because their capabilities are not sufficient for most customers. This continues until the functionality is 'good enough' for the customers who are 'over-served' within the main market. As shown at Point C, the market may suddenly flip, with market share moving rapidly toward the low-end disruption, driven by superior price-performance levels.

*Functionality that is
'good enough' for the
'over-served' customers*

² IDC Market Analysis: Worldwide Business Analytics Software 2004-2008 Forecast, Report #31837, 2004.

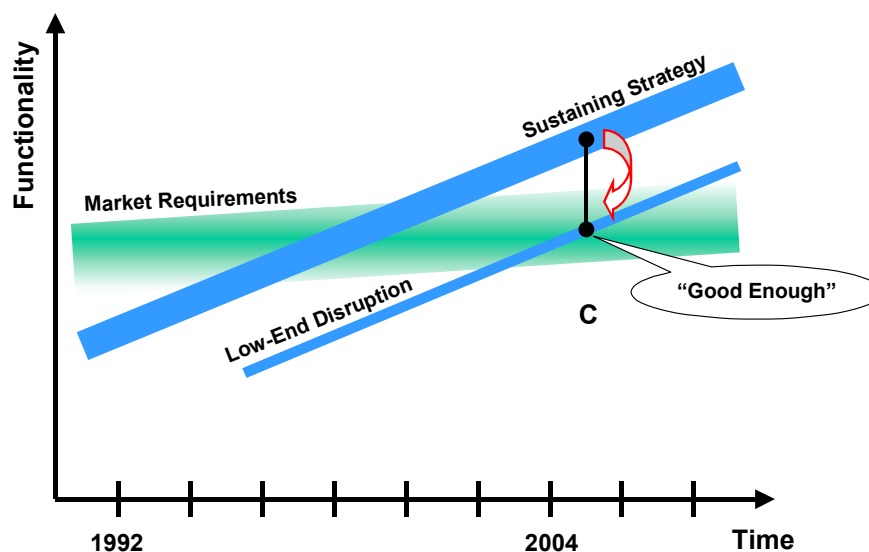


Figure 2 - Low-End Disruptions

During 2005, the DW market will be experiencing a low-end disruption from Microsoft's SQL Server 2005. Without additional cost, a host of BI services will be packaged with the database. Because of the integration with .NET Visual Studio, many third-party software vendors can now offer their products with advanced data mining and multidimensional analysis with just an extra click. For many companies in the main BI market, these pervasive BI add-ons may be 'good enough' to pull them away from the usual BI vendors, such as Business Objects, Cognos, and the like.

New-Market Disruption

New-market disruption is indirect competition from products that are more convenient and easier-to-use. This draws 'non-customers' (relative to the main market) into a new market. Christensen states, "New-market disruptive products are so much more affordable to own and simpler to use that they enable a whole new population of people to begin owning and using the product."³

As shown in Figure 3, a new market is created and does not initially disrupt the main market. In fact, the new market will strengthen the main market by raising profit margins because the less profitable customers have fled to the new market. Over time, the functionality of the new-market disruption will improve to where the two markets will collide, with the larger new market absorbing the older main market.

The DW market is following this same scenario. With the emergence of DW appliances, like that of DATAlegro and Netezza, I predict that a new DW market will be created over the next few years. Companies who have not invested in DW technology will be drawn into this new market through self-contained DW appliances that are convenient and easy-to-use.

*Convenient and easy-to-use
creates a new market
from non-customers.*

³ *Ibid*, p. 45

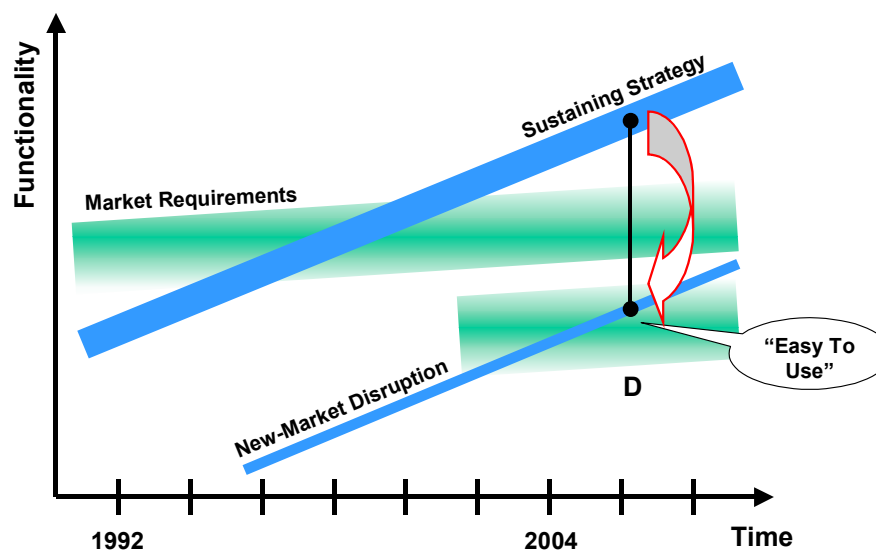


Figure 3 - New-Market Disruptions

These companies could be small or medium businesses; however, the larger potential may be corporations with departments requiring new DW capabilities or having data volumes that are growing exponentially. “The market opportunity for non-consumption and, especially, under-consumption of DW resources is extremely large. In every client conversation, we see companies limiting DW usage or leaving whole departments unsupported,” remarked Stuart Frost, CEO of DATAlegro.

*Plug in a DW appliance,
press a button, and
improve customer service.*

The critical factor will be the ability of DW appliances to be truly an appliance. DW appliances must be more than just a low-end alternative. They must be simple and reliable, delivering value at the press of a button. Plug in a microwave, press a button, and zap your pizza for dinner. Plug in a DW appliance, press a button, and improve customer service. This level of convenience and usability will be the challenge for DW appliances.

In conclusion, there are some bumps in the road for the DW market this year. Along with continuing acquisitions, low-end products and new market segments will challenge us all. So, will data warehousing fade from our IT landscape? Yes, just like jet engines have faded from air transportation. You do not think about it, but the technology is all around you.



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Richard has published numerous articles in trade and academic publications, presented regularly at leading trade conferences, and conducted professional seminars in eighteen countries. He writes for DM Review with a monthly column entitled The BI Watch that reaches over 75,000 IT professionals. He has written three professional texts, entitled Enterprise Database Connectivity, Using the Data Warehouse (with W.H. Inmon), and Web Farming for the Data

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