

# : *How is analytics, BI and decision support shaping global society?*

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Computer-based analysis and decision support began impacting global society in the early 1950s. By 1995 the Web was facilitating wider deployment of analytics and decision support. Sixty years of decision support technology progress has had many impacts on what managers do, how organizations operate, how people think, and what is considered important. In 2013, organization decision making is linked to data from many sources and analysis of data is viewed as important. Managers want insight into customer behavior, more predictability in the supply chain and faster, more agile responses in changing, competitive situations. Analytics and decision support are providing solutions for managers and organizations. Let's develop some hypotheses about what is changing and the impact of analytics, BI and decision support on society.

**Hypothesis 1.** Organizations capture and analyze more data currently than in the pre-decision support era by many orders of magnitude adjusted for population increases.

McKinsey Global Institute and McKinsey's Business Technology Office studied data volumes in five domains — healthcare in the United States, the public sector in Europe, retail in the United States, and manufacturing and personal-location data globally. The research by Manyika et al. (2011) estimated that, by 2009, "nearly all sectors in the US economy had at least an average of 200 terabytes of stored data (twice the size of U.S. retailer Wal-Mart's data warehouse in 1999) per company with more than 1,000 employees". Data capture is increasing for many reasons. Managers hope the data will be useful.

**Hypothesis 2.** Expenditures on decision support technologies are increasing even as the cost per technology unit (per processor, speed of processor, memory, etc.) of capability for hardware falls.

According to Kalakota (April 24, 2011), Gartner estimates BI and Analytics expenditures grew 16.4% to USD \$12.2 Billion in 2011. Computer prices continue to decline and processor capabilities continue to improve. Better computing capabilities facilitate better computerized analytics and decision support.

**Hypothesis 3.** Analysis of large quantities of data is easier and faster each year adjusted for the increasing volumes of data.

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Walker (2013) notes In-Memory Data Grids (IDG) "allow organizations to collect, store, analyze and distribute large, fast-changing data sets in near real-time. ... Research shows that organizations using IDG's are able to analyze larger amounts of data at faster speeds than competitors." Computing capabilities support better and faster data analysis.

**Hypothesis 4.** Analysts and decision makers can extract and analyze data in real-time and use decision support tools that were not available prior to the advent of wireless and cellular technologies.

The past 5 years have seen significant changes in decision support. Decision support on-the-go changes what is possible and what is expected. Managers assume that data and analyses will be available at any time when it is needed.

**Hypothesis 5.** The total cost of ownership (TCO) of decision support technologies per employee user in constant dollars is lower than at any prior point in the decision support era and the functionality has dramatically increased.

According to an HP report, "Industry analysts report that only 30 per cent of IT expenses are hardware-related. The other 70 per cent are related to costs such as support, maintenance, consumables, end of life and energy." Griliches (2009) notes in a report "A good total cost of ownership (TCO) model incorporates hardware and software costs, installation and license tracking, warranties and maintenance agreements, as well as vendor financing options. It must also include operational expenditures." Many of the costs are fixed costs and evidence suggests the percentage of users in companies is increasing. Companies are adopting new decision support technologies and incurring new costs. For example, computereconomics.com reported in 2011 "that 28% of organizations are currently investing in predictive analytics solutions compared to 22% that have the technology in place." **BUT, the real cost per employee who is using decision support has declined.** Fixed costs are spread over more users and infrastructure costs continue to decline.

**Hypothesis 6.** More is known about individuals and organizations conduct extensive data-based analyses of customers and potential customers.

Customer Relationship Management (CRM) and predictive analytics has led to extensive collection and analysis of data. Managers can identify buying behaviors and patterns using data.

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**Hypothesis 7.** Businesses that use analytics, business intelligence and decision support are more successful and more profitable.

Managers want to believe this hypothesis to justify the large expenditures made on decision support technologies in most companies. Establishing a direct causal link is difficult. An indirect indicator is the success of companies where employees are active in decision support vendor users group like Teradata Partners. One would expect above average returns in these firms if this hypothesis is true.

**Hypothesis 8.** Quality of life has improved as a result of analytics, business intelligence and decision support.

This is the "leap of faith" hypothesis. Many people hope that decision support technologies have improved the quality of life. Proving this hypothesis is challenging. An indirect indicator is whether or not people feel that information and decision support technologies helps them make better decisions.

More research is needed to verify these hypotheses, but evidence indicates analytics, business intelligence and decision support are shaping global society as a data centric, real-time, decision-oriented environment. Global society is extremely dependent upon data and data-driven decisions are increasingly the norm in organizations. Business managers want more data and more analyses. The assumption is that fact-based, data-driven decision making will result in higher profits and better outcomes for organizations.

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