

# *: How can managers cope with digital disruption?*

by Daniel J. Power

and Ciara Heavin

Nineteen fifty one (1951) marks the beginning of the first wave of economic and social digital disruption and transformation. The first commercially available digital computer was the Ferranti Mark I, an English digital computer released in February 1951. A much more famous and commercially successful digital computer, the Universal Automatic Computer (UNIVAC) was released in March 1951.

Vacuum tube computers of 1951 have become solid state, miniaturized devices. Digital computers and specialized software replaced many thousands of bookkeepers and their ledger books. The Sears, Roebuck, and Montgomery Ward merchandise catalogs are defunct, replaced by online shopping at sites like Amazon.com. Rotary dial phones were replaced by various digital technologies over the years; communication is now dominated by the ubiquitous smart phone. Black and White over the air television displayed using cathode ray tubes (CRT) has been replaced by streaming media provided over the Internet on digital displays. Handwritten, personal letters have been largely replaced by E-mail and social media. These, and many other large-scale changes, have resulted from the initial waves of digital transformation. We have seen incredible data-enabled changes. Digital disruption is continuing, and the possibilities for change and digital transformation have expanded.

Many organizations must change to survive digital disruption, and managers in those organizations must create and pursue what can be called a digital transformation strategy. Some sources estimate that 90 percent of all the data in the world today has been created in the last few years. According to a number of estimates, 2.5 exabytes, equivalent to 2.5 quintillion bytes,<sup>1</sup> of data are generated every day. Research group IDC estimates that 163 zettabytes of data will be created each year by 2025.<sup>2</sup> Global society is in the midst of a profound and irreversible change. Data are everywhere, we are dependent on digital devices, and data provide an opportunity for innovative business models, increased efficiencies, and greater effectiveness in meeting customer needs.

At a fundamental level of practice, managers must make better use of data and facts in decision making. Facts should guide digital transformation and digital transformation initiatives should increase the use of data and facts in every activity and process of an organization including decision making. Analyzing data is now a core decision support task in many businesses as managers try to derive value from the large volume of diverse data sources. Digitization of business activities and processes has led to an explosive growth in data. The “Big Data” tsunami has hence increased the need for business and data analytics. This major change has heightened the need for managers to understand the possibilities of these technologies and their application in a variety of areas including consumer financial services, insurance, manufacturing, media, retail, pharmaceuticals, health care, and government.

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As senior managers formulate information technology (IT) strategies, formulate a digital transformation vision, and assess investments, it is essential to use data-based decision making and data analytics to investigate and evaluate choices. Managers should ask if the investments will improve organizational decision making, knowledge management, yield valued digital transformation, and ultimately enhance organizational success? According to Grossman (2016), "Organizations that foster a culture of making data-based decisions will be in a stronger position to weather the changes ahead." We agree!

Formulating digital transformation strategy involves making decisions about technology trade-offs and ideally choices are data-informed and fact-based. Data-based decision making is both a process and a culture. Some managers and organizations already value using data and facts to make decisions. Part of successful digital transformation is making systematic use of data in decision making. Data-based decision making, using data and facts to make decisions, is both a prerequisite to digital transformation and the result of a data-informed culture. Improved data-based decision making is and should be a necessary consequence of a digital transformation vision and strategy.

Global business activity is accelerating and decision-making activities and processes must be responsive to changing business needs and a high velocity decision environment. Understanding what is occurring can increase the adaptive response of managers. Awareness is a major goal of the following chapters. In general, it is not sufficient to only understand the need for new technology-supported processes, for better use of data in decision making and the possibilities for revised and innovative business models to achieve positive change. Managers must understand how to successfully implement digital transformation competitive opportunities. Managers must think digital and be committed to building data capture and data use into core activities and processes. A transformation strategy without an implementation plan and action taking is wishful thinking.

Improved data-based decision making skills of middle-level managers and use of analytical tools and innovative computerized decision support can reduce the negative consequences and chaos some organizations are experiencing due to digital technologies and vast, ever-increasing, amounts of data. Data-based decision making can help channel information technology changes in positive directions that are essential to successful digital transformation and improved organization viability.

Relying solely on programmed data-driven decision making using algorithms and reducing the number of decision makers in an organization is only a partial solution for effective digital transformation and then only in some industries. Replacing decision makers with decision automation, programmed data-driven decision making, and decision management has a serious downside for society and may actually increase digital disruption and make positive digital transformation in an organization less likely.

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We have explored, and continue to explore, the riddle of how managers can cope with digital disruption. There is consensus that the competitive problem of digitalization is real. Digitalization refers to enabling, improving, and/or changing business operations and business processes and activities using digital data and technologies. This term is often used interchangeably with digitization and digital transformation.

Our research identified examples of entrepreneurs and managers implementing new business models and taking strategic actions intended to use digital technologies for competitive advantage. In some cases, actions seemed short term and mere repairs to outdated processes, rather than significant changes to processes and business models. In other cases, the transformation was innovative and extraordinarily successful.

In conclusion, to cope with digital disruption, many managers should learn new knowledge and new skills, including the basics of analytics, data-based decision making, and digital transformation technologies. The goal is for managers to become data-based decision makers who can assess, choose, and successfully implement digital transformation competitive opportunities.

### References

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Author: Daniel Power

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