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Gartner Says Smart Machines Will Have Widespread and Deep Business Impact Through 2020

Analysts to Explore Major Business and Technology Trends at Gartner Symposium/ITxpo 2013, 6-10 October, in Orlando

Gartner's Maverick Research Special Report Sparks New, Unconventional Insights

ORLANDO, FL., October 10, 2013 — Sixty per cent of CEOs believe that the emergence of smart machines capable of absorbing millions of middle-class jobs within 15 years is a "futurist fantasy," according to Gartner's 2013 CEO survey. However, Gartner predicts that smart machines will have widespread and deep business impact within only seven years through 2020.

"Most business and thought leaders underestimate the potential of smart machines to take over millions of middle-class jobs in the coming decades," said Kenneth Brant, research director at Gartner. "Job destruction will happen at a faster pace, with machine-driven job elimination overwhelming the market's ability to create valuable new ones."

Gartner analysts discussed the growing impact of smart machines at Gartner Symposium/ITxpo 2013, being held in Orlando through today.

CIOs must change their mission to address the proliferation of smart machines in a widening range of jobs and consider the impact this trend might have on their career paths and on increasing levels of unemployment, according to Gartner's latest "Maverick" research.

Gartner's Maverick research is designed to spark new, unconventional insights. Maverick research is unconstrained by Gartner's typical broad consensus-formation process to deliver breakthrough, innovative and disruptive ideas from the company's research incubator to help organisations get ahead of the mainstream and take advantage of trends and insights that could impact IT strategy and the wider organisation.

Machines are evolving from automating basic tasks to becoming advanced self-learning systems as capable as the human brain in many highly specialised professions. As such, the next wave of job losses will likely occur among highly valued specialists during the next decade.

Gartner research has found that many CEOs are failing to recognise the widespread and deep business impact that smart machines will have through 2020.

"The bottom line is that many CEOs are missing what could quickly develop to be the most significant technology shift of this decade," said Mr Brant. "In fact, even today, there is already a multifaceted marketplace for engineering a 'digital workforce,' backed by major players on both the supply and demand side. This marketplace comprises intelligent agents, virtual reality assistants, expert systems and embedded software to make traditional machines 'smart' in a very specialised way, plus a new generation

of low-cost and easy-to-train robots and purpose-built automated machines that could significantly devalue and/or displace millions of humans in the workforce."

Gartner said that the capability and reliability of smart machines will dramatically increase through 2020 to the point where they will have a major impact on business and IT functions. The impact will be such that firms that have not begun to develop programs and policies for a "digital workforce" by 2015 will not perform in the top quartile for productivity and operating profit margin improvement in their industry by 2020. As a direct result, the careers of CIOs who do not begin to champion digital workforce initiatives with their peers in the C-suite by 2015 will be cut short by 2023.

A number of forces are colluding to make this threat a reality, not least the fact that the technologies for building a large-scale and diverse scope of smart machines are coalescing and being tested by "first movers." At the same time ongoing weak revenue growth in the global economy will spur demand for cost reduction and productivity improvement by employing smart machines in place of humans.

"It's worth remembering that IT cost is typically about four percent of annual revenue, whereas the labour costs that can be rationalised by smart machines are as high as 40 per cent of revenue in some knowledge and service industries," said Mr Brant. "The supply side of the market — including IBM, GE, Google, Microsoft, Apple and Amazon — is placing large bets on the success of smart machines, while the demand side includes high-profile first movers that will trigger an 'arms race' for acquiring and/or developing smart machines."

While Gartner maverick research asserts that smart machines will have widespread and deep impact through 2020, we also recognise there are significant impediments in the business, political, economic, social and technology spheres that must be overcome and these include

- Early pilots will fail to produce desired results
- The technology will not progress rapidly through the end of this decade
- The price of technology will not reduce rapidly through the end of this decade
- Labour unions will reorganise and successfully oppose the intrusion of "job-killing" smart machines
- Citizens will protest higher and more prolonged states of unemployment, electing governments to legislate against smart machines
- Consumers will reject the machines — either because of a highly publicized catastrophe or because of a more subtle and prolonged need for human interaction
- People will provide even greater productivity increases than smart machine replacements.
- Legal challenges, stemming from the explicit "programmed morality" in automatic smart machines involved in accidents, will derail the market for autonomous agents.

"We certainly will not approach a state of mass unemployment at any time in the near future," said Mr Brant. "What is also certain, however, is that many new combinations of technology — from intelligent software agents, expert systems and virtual reality assistants to software systems embedded in smart products and revolutionary new forms of robotics — will emerge and have great impacts in this decade. We won't need to develop a full-functioning artificial brain by 2020 for smart machines to have radically changed our business models, workforce, cost structure and competitiveness."

About Gartner Symposium/ITxpo

Gartner Symposium/ITxpo is the world's most important gathering of CIOs and senior IT executives. This event delivers independent and objective content with the authority and weight of the world's leading IT research and advisory organization, and provides access to the latest solutions from key technology providers. Gartner's annual Symposium/ITxpo events are key components of attendees' annual planning efforts. IT executives rely on Gartner Symposium/ITxpo to gain insight into how their organizations can use IT to address business challenges and improve operational efficiency.

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15-17 October, Tokyo, Japan: www.gartner.com/jp/symposium

21-24 October, Goa, India: www.gartner.com/in/symposium

28-31 October, Gold Coast, Australia: www.gartner.com/au/symposium

4-7 November, Sao Paulo, Brazil: www.gartner.com/br/symposium

10-14 November, Barcelona, Spain: www.gartner.com/eu/symposium

Rich scenarios for smart machine adoption and impacts on business and society plus more detailed analyses are also available in the report "Maverick* Research: Surviving the Rise of 'Smart Machines,' the Loss of 'Dream Jobs' and '90% Unemployment.'" The report is available on Gartner's web site at <http://www.gartner.com/resId=2594820>.

The report is part of the Gartner Special Report "Drive Disruptive Innovation with Maverick* Research." This Special Report explores high-impact future scenarios that help companies think differently to uncover opportunity and enable innovation. This collection of research is intentionally disruptive and edgy to help IT leaders get ahead of the mainstream and take advantage of trends and insights that could impact their IT strategy and their organization. The Special Report is available at <http://www.gartner.com/technology/research/maverick/>.

About Gartner

Gartner, Inc. (NYSE: IT) is the world's leading information technology research and advisory company. Gartner delivers the technology-related insight necessary for its clients to make the right decisions, every day. From CIOs and senior IT leaders in corporations and government agencies, to business leaders in high-tech and telecom enterprises and professional services firms, to technology investors, Gartner is a valuable partner in more than 13,000 distinct organizations. Through the resources of Gartner Research, Gartner Executive Programs, Gartner Consulting and Gartner Events, Gartner works with every client to research, analyze and interpret the business of IT within the context of their individual role. Founded in 1979, Gartner is headquartered in Stamford, Connecticut, USA, and has 5,800 associates, including more than 1,450 research analysts and consultants, and clients in 85 countries. For more information, visit www.gartner.com.

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