In 2030, CIOs will excel at value creation for their enterprises. Four future scenarios demonstrate how CIOs will change their daily activities, relationships with other executives, IT organizations and performance measures to meet emerging challenges that have implications for the CIO role in 2030.

Analysis

Can you imagine yourself as a CIO who contributed to the following scenario?

A driverless train pulls into a pedestrian plaza at the end of the work day. People come within steps of the train without worry because they trust the autonomous world around them. Messages are coming from the plaza, the buildings, the cars and the individuals in the area. A building on the plaza starts to put itself in energy conservation mode and security lockdown. The parking garage informs cars in the area of drop-in rates. Those cars automatically calculate that parking rates are in fact lower, and move themselves to the lower-priced garage. Driverless taxis pick up tweets and meet potential customers. Our CIO leaves work. Her car pulls up to the door to pick her up, announcing the money it saved on parking.

This is what the world may look like in 2030. But the scenario doesn't just describe the technologies that IT organizations will help to implement by then. Making the technology work will require a new social contract, nonlinear approaches to work, and the dynamic combining and recombining of industries (see "Assess 10 Workforce Dimensions Before Embarking on Digital Workplace Programs" and "How to Achieve Enterprise Agility With a Bimodal Capability").

CIOs will have to change the way they deal with all of these areas. That means the fundamentals of the CIO role will also have to change. Gartner has produced a set of CIO futures reports that describe life for CIOs in 2030 and what they need to do today to start transforming their role:

- "CIO Futures: A Day in the Life of a CIO in 2030" — A day in the life of a CIO in 2030
- "CIO Futures: CIO Executive Relationships in 2030" — The CIO’s relationships with enterprise officers and executives
- "CIO Futures: The IT Organization in 2030" — The organization chart for the IT department
"CIO Futures: CIO Performance Management in 2030" — Measurements of the CIO’s performance

The Future Will Be Algorithmic

Take a closer look at the 2030 scenario. Everything in the plaza has been equipped with sensors. Everything has the ability to make decisions about its immediate role in relation to the environment or ecosystem, and algorithms continually optimize and predict its next steps. Algorithms are not simply a set of procedures to code. They imply an entire culture:

- **Sourcing**: Some of the algorithms used in the scenario were produced by the CIO’s organization. Some were procured by her from other companies (maybe jointly owned) or had been donated to the commons.

- **People**: Some people who created the algorithms were in the CIO’s organization. Some people were "borrowed" — probably for money, but maybe not. Some were high school or even middle school students, exploring interesting ideas that got her attention. She hired them for a brief time, but a few she would use for a long time.

- **Functions**: Some algorithms were integrated into the company’s processes, others not. Some were delivered as part of the enterprise’s commitment to the smooth functioning of society. Algorithmic solutions have replaced business processes, entire systems, human work and many of the things a CIO used to do, such as scheduling.

Value Will Come From Many Sources

The world of 2030 will not recognize hard boundaries between one industry and the next; between the enterprise and the surrounding society; between the workforce and other citizens. All will work together interdependently. The enterprise will take from the wider society capabilities it needs to run its business, while it contributes capabilities to society. The CIO will still help the enterprise to create value, but the definition of value will expand from traditional measures such as profit and ROI to include the well-being of the larger environment within which the enterprise operates:

- **Business algorithms**: Business algorithms will generate and be managed as new sources of value.

- **Relationships**: Every person is a potential relationship, and every relationship is a source of value.

- **New IT core**: The IT core (hardware, software infrastructure, networks and so on) will have sensors that recognize what has changed in the environment, and will self-heal so that IT operations runs lean and save resources for value-creating activities.

- **Social**: Society will become integral to corporate value — we already see this trend in the open-source movement and in crowdsourcing. Making the world a better place will matter — this is an explicit goal of Google, Tesla and other born-digital companies. And people will work to advance their ethical views or purpose in life, not just for economic gain.
Individual capability: Built-in sensors and augmented intelligence will enable individuals (workers as well as citizens) to make good decisions and to create value amid complexity.

Ecosystem: A self-learning ecosystem increases its ability to create value over time. As the smart machines and algorithms embedded in the system process more data, gain more "experience" and "learn," they discover unexpected new solutions to the issues they address.

The CIO’s Job Will Be to Harvest Value

In 2030, there will not be a hard boundary between production and delivery either. As we saw in the scenario above, new value can emerge from every step in the process of serving customers. Digital technology will enable the enterprise to know what is going on everywhere, and to assemble information and capabilities from various places to create new value. For this reason, the CIO and the IT organization will help to oversee the value creation process (see Figure 1):

- Incubating bits of brilliance: New ideas come from continuous learning and observation. Individuals (including customers) can develop useful ideas, as can teams and even self-healing systems sending alerts about new happenings. At a certain point, ideas coalesce into a possible new capability, which becomes a potential opportunity.

- Identifying opportunity: The enterprise may use traditional strategy and governance processes to develop the business opportunity created by the new capability, but experiment-and-learn cycles will become the dominant way that an opportunity is shaped and decisions are made. An intelligent ecosystem could self-generate opportunities, too. Again, customers may contribute — their involvement winning recognition or rewards from the enterprise (see "Digital Businesses Will Compete and Seek Opportunity in the Span of a Moment").

- Orchestrating: To capitalize on the opportunity, the enterprise must marshal individuals and "things" from multiple sources and companies with expertise in particular areas. They will handle the processes, contracts, ethical frameworks and other elements needed to turn an opportunity into a business.

- Creating: The ecosystem, made up of organizations that recognize the value of working together in shifting combinations, then starts delivering value to customers (see "Five Business Ecosystem Strategies Drive Digital Innovation"). The delivery phase generates its own insights, which feed another cycle of value creation.
Research Highlights

By 2030, the CIO will become a value creation expert instead of an operations expert, and will work in a multisided world instead of within a self-contained organization. Thus, the fundamentals of the role will change from what they are today. We want to give CIOs a picture of what life will be like for them in 2030, plus steps they can take today toward that vision. We created a series of four reports with a common structure that each addresses a particular aspect of the CIO role.

"CIO Futures: A Day in the Life of a CIO in 2030"

Digital business will change the focus of the CIO in most enterprises from leading IT operational execution, to one of the most active leaders of revenue generation in the enterprise. As a result, the daily schedule of the CIO will evolve to activities largely focused on interacting with customers, identifying revenue opportunities, and orchestrating the realization of those opportunities across a broad variety of sourcing options.

"CIO Futures: CIO Executive Relationships in 2030"

This report explores the CIO’s relationships with other executives to highlight the new responsibilities a CIO will have in 2030. Digital business will change the role of the CIO in most enterprises from the manager of the IT organization into the second most important business strategist and operational leader after the CEO. This transformation poses big challenges for CIOs themselves, but it will pose just as big a challenge for the whole executive committee. After all, a changing CIO role will alter the CIO’s relationship with the CEO, CFO, CMO, head of HR, other top executives and even the board of directors.
"CIO Futures: The IT Organization in 2030"

The CIO of 2030 will be a seasoned global executive, able to attract, inspire and enable a pluralistic workforce of multitalented, independent thinkers. The IT domain's culture and organizational design will follow agile practices and the principles of holacracy that are being tested in IT today. The IT domain will be organized in a highly flexible arrangement of clusters or pods that switch between assignments as ideas flow, priorities rebalance and demand surges. The IT workforce will form and re-form small, self-organizing teams to work on a fast-flowing pipeline of ideas and opportunities.

"CIO Futures: CIO Performance Management in 2030"

In 2030, CIOs spend most time in their role and interactions as an executive, not internal to their function. As a result, CIO metrics will be more similar to other executive metrics than in 2016. New measures for 2030 include the intelligence or "smartness" of the company compared to its peers and the CIO's direct contribution to new business models and revenue through information. The CIO's metrics will come in the form of a gameboard, which will be updated in real time from a range of internal and external indicators.

Gartner Recommended Reading

Some documents may not be available as part of your current Gartner subscription.

"Evolving the CIO Role Primer for 2016"

"Reporting the IT Organization's Performance"

"The Art of the One-Page Strategy"

"Defining Algorithmic Business"

"Top 10 Things CIOs and CDOs Need to Know About Algorithmic Business"

"The IoT Effect: When the CIO Becomes the Product Head"