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Crunch time series

The CFO guide to data management strategy

MAKING AN IMPACT THAT MATTERS since 1845

Knock, knock!

Who's there?

Your data sources.
We can help you, if you let us.

No way. My data sources don't talk to each other.

You might be surprised at what's possible.

Faster than you imagined

Faced with the challenge of connecting and analyzing data from multiple sources, you might think you need to overhaul your core technology platforms. A large-scale ERP implementation is one way to handle the problem. But it's not your only option.

Data management tools and techniques are evolving rapidly—and they're helping finance leaders solve thorny data issues in a matter of months, not years. While there are no silver bullets, you may be able to apply digital finance capabilities in far less time than you thought possible or were led to believe.

New technologies using machine learning, natural language processing, and advanced analytics can help you fix or work around many data problems without the need for large-scale investment and company-wide upheaval.

In fact, such technologies are already being used to help improve corporate-level forecasting, automate reconciliations, streamline reporting, and generate customer and financial insights. They also can help reduce the cost, effort, and risk associated with digital finance transformation.

So, if data quality is a problem—and you keep hearing "the systems don't talk to each other"—then it might be time to explore new options.

New technologies can help you fix or work around many data problems without the need for large-scale investment and company-wide upheaval.

What’s inside

Cutting through the noise

As companies generate more and more data each day, finance teams have seemingly limitless opportunities to glean new insights and boost their value to the business. But if it were easy, everyone would do it. The problem is, the amount of data emanating daily from various sources can be overwhelming.

In our Finance 2025 series, we call this the data tsunami. To manage it, businesses need a practical way to collect, process, govern, and act upon reams of information. This has led many firms to strengthen their data-management foundations by, for instance, establishing enterprise or finance data lakes, streamlining reporting practices, and cultivating data management and analytics skillsets.

The shift to a cloud-based ERP is often a catalyst for these efforts. We've covered this approach in depth in other Crunch time reports (see, for instance, The CFO guide to Cloud, The CFO guide to SAP S/4HANA®, and The CFO guide to Oracle Cloud). But many data challenges can be addressed throughout the enterprise with simpler or more targeted solutions—and that's the focus here.

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Getting a handle on your data

Digital technologies are helping to reshape how Finance does business—lowering operating costs, effort, and risk while increasing the analytic value and transparency of financial data. Here are some of the ways finance teams are using these technologies to tackle data challenges.

Financial planning

Shift from spreadsheet models and intuition to automated, analytic-based models

Integrate cloud planning systems with data lakes to address combined internal and external data needs

Ensure consistent data categories and federated aggregation processes from the corporate core

Finance operations

Create hierarchies that can handle evolving management, financial, and regulatory reporting

Streamline workflows and automate reconciliations across sources to increase journal entry traceability and audit responsiveness

Leverage advanced analytics using machine learning for exception and risk identification

Decision support

Clarify information needs across business units, geographies, and source systems

Unlock insights using a big data or cloud-based data-staging environment so data is accessible anywhere it resides, including the ERP

Create interactive reports that let users drill down through multiple layers of information

What's the problem?

CFO

We need to change how we look at revenue and profitability. Besides measuring it by product, I'd like to see results by customer segment, and I'd like to understand customer attributes like how long the buyer has done business with us.

CIO

We're not set up to measure revenue that way, never mind profitability. We don't track it by type of customer.

CFO

I know we gather customer information. Can't we match up our sales, costs, and customer data?

CIO

The information is housed in separate systems.

CFO

Why can't we merge them?

CIO

With our current technology, that's not as easy as it may sound.

Leveraging technology

Advances in digital technology offer CFOs new options in data management—particularly when your current systems are not on speaking terms. Cloud-based architecture can organize and reassemble data on the fly. Advanced analytics tools let you draw conclusions from data points spanning multiple platforms. Machine learning and AI can apply controls and monitor risks—enabling course corrections in real time.

Here are some ways Finance and IT, across diverse industries, are leveraging technology to extract more value from the data they collect.

Health care

Linking tabular product and contract data with invoice and purchase-order data to detect spend and savings patterns

Banking

Applying quantitative techniques to understand correlations among business performance, macroeconomic conditions, and internal results

Consumer products

Using analytics to gain new insights from marketing spend and sales performance data, resulting in more targeted marketing programs

Asset management

Using analytics to enhance all-in profitability analyses across the enterprise, enabling leaders to pinpoint what's truly driving performance

Payment processing

Leveraging machine learning to spot new patterns and formulate rules for automating cash-allocation categorization

Automotive

Using a tool called CogniSteward™ to create business dashboards based on data from Excel and other sources

Aerospace

Deploying another tool— CogX—to extract data from engineering drawings and store it in Excel, facilitating new business insights

Energy

Allowing data quality queries to be plugged directly into CogniSteward so the tool could perform consolidated data analysis, match, and merge for future M&A

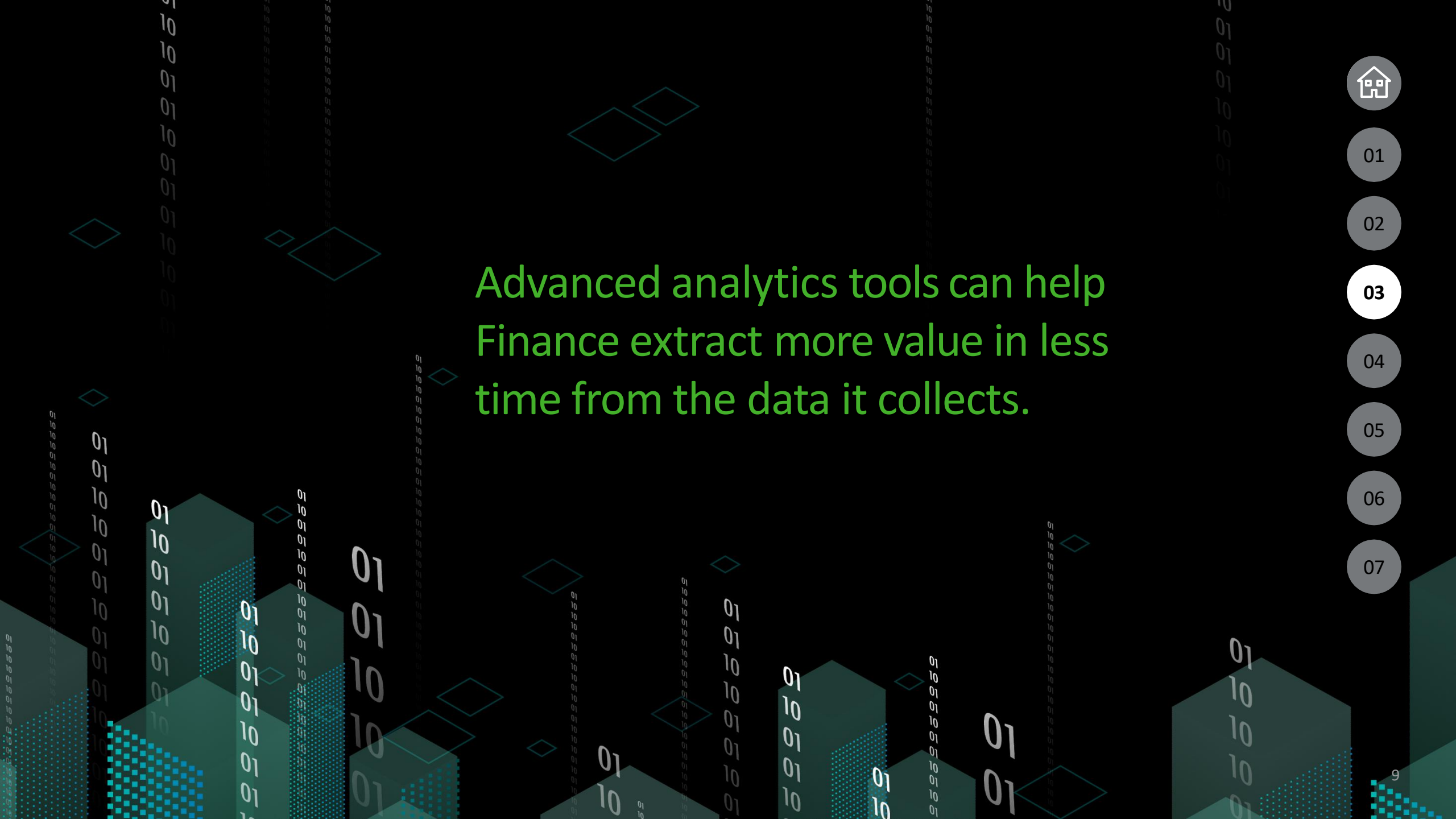
Cable

Employing sparse matrix algorithms to simulate the effects of data outages from 15 minutes to 12 weeks, producing predictions within 12 to 18 seconds of actual viewership

Food service

Using CogniSteward to integrate customer data across systems and apply machine learning-based clustering algorithms to identify overlapping customers

In short, digital tools and techniques are fundamentally changing how Finance gathers and consumes data—and enhances its value to the business.



Advanced analytics tools can help Finance extract more value in less time from the data it collects.

How is this possible?

You've hired a new employee on your data governance team and quickly realized you've made a great decision. She's able to sort through millions of data points in record time, accurately organizing and scrubbing intricate data sets. This helps your team draw fresh insights from information that's been building in scale and complexity for years.

She's also a quick study. After some initial guidance, she's gained confidence and independence, learning from her mistakes and building proficiency. Even when tasked with supporting the data strategy for a complex divestiture, she rose to the occasion, readily sorting and cataloging both structured and unstructured data while simultaneously flagging confidential information.

You may be thinking that this level of work isn't humanly possible; and you would be right. Your new hire isn't human. She's a data management solution powered by artificial intelligence (AI) and machine learning (ML).

AI and ML technologies, which we are lumping together in the interest of simplicity, can perform tasks normally requiring human intelligence—and deliver immense benefits to finance organizations. They can be used, for instance, to automate historically manual and time-consuming data cleansing and profiling processes while also boosting the accuracy and reliability of output data.

Categorization and cleansing algorithms enhanced by ML can learn by monitoring what a human analyst does to a subset of the data, then apply that learning to process large volumes of data, cataloging and refining it along the way. These algorithms can also make data linkage and mapping suggestions to facilitate data consolidation and analysis across databases, leading to new financial insights.

In short, AI and ML can create opportunities not only to reduce processing costs, but also to free up Finance's time to do more value-added work. This is arguably the biggest benefit of complementing humans with machines.

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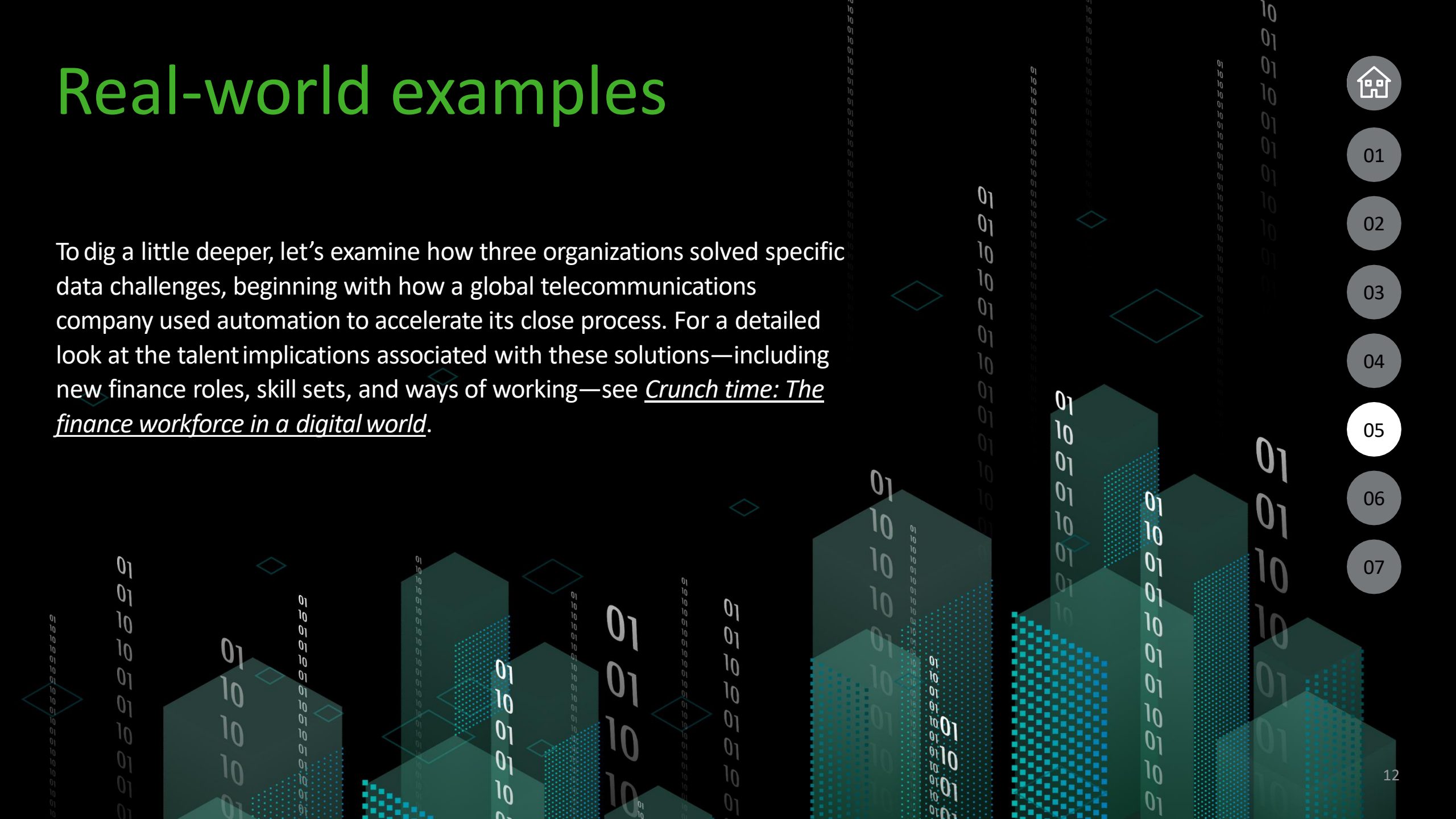
Using AI and ML to optimize data management

Having a robust data infrastructure is foundational to all AI-related projects. So it's not surprising that AI adopters selected "modernizing our data infrastructure for AI" as the top initiative for increasing their competitive advantage from AI, according to Deloitte's State of AI in the Enterprise, 3rd Edition (2020). To optimize your data infrastructure, you can use AI and ML numerous ways, as shown in these examples.

	Business problem	AI/ML solution
 **Life sciences**	To prepare for a complex divestiture, the company had to determine what unstructured data to transfer to the separating entity and what to retain in-house.	**Used ML to triage unstructured data based on ownership, content, and usage; group data into "leaving" and "staying" buckets; and mark sensitive information for special treatment.**
 **Food services distributor**	Following a series of acquisitions, the company was unable to identify overlapping customers and vendors listed in legacy and acquired databases.	**Used ML-enhanced clustering algorithms to identify common records across databases. The cleansed data, in turn, provided valuable insights for coordinating go-to-market strategies and margin-improvement initiatives.**
 **Aerospace and defense technology manufacturer**	The company needed to optimize its inventory management processes to ensure customers' aircrafts would be mission-ready on schedule.	**Used dynamic algorithms and metrics visualization to address common data quality issues and data mismatches. Also created ML-based statistical models to improve data output validation.**

Real-world examples

To dig a little deeper, let's examine how three organizations solved specific data challenges, beginning with how a global telecommunications company used automation to accelerate its close process. For a detailed look at the talent implications associated with these solutions—including new finance roles, skill sets, and ways of working—see *Crunch time: The finance workforce in a digital world*.



Global Telecommunications Company

Focus

Finance close automation

Objective

Automate processes to close the books faster

Problem

Achieving an accurate, predictable close placed a massive burden on the finance team due to a lack of integration between data sources in a multi-ERP environment

Solution

Implemented a workflow portal to make the end-to-end accounting close operation more efficient and transparent while improving data quality

Benefits

The finance team connected the workflow portal's automated platform to the ERP and leveraged the platform's workflow, visualization, and automation capabilities to provide visibility into the full close cycle. They also created a centralized workspace for all close-related activities, which helped the team pull in the right people at the right time, reduce handoffs, and increase accountability. As a result, Finance reaped these benefits across the close process:

Lower risk

- Enhanced data validation, correction, and enrichment
- Accelerated anomalous data issue detection
- Automated control monitoring, with stored audit trail

Greater efficiency

- Direct data-to-journal flows without human involvement
- Reduced email traffic, since approvals are tracked within the platform
- Single portal for end users, lessening the need to manually jump between tools

Faster close

- Live workflow management with end-to-end accounting close in one location and real-time tracking
- Fewer bottlenecks and delays and proactive handling of issues
- Strong integration capabilities across systems

Global bank

Here's how a global bank streamlined its disparate international data sources through an enterprise data lake and automated its management information and reporting processes.

Focus

Customer analytics

Objective

Deliver complete and accurate financial and customer revenue results across priority segments

Problem

Operational complexities, systems limitations, and data governance problems hindered global reporting capabilities

Solution

Leveraged on-premises data lake to automate the process of tracking core metrics in priority locations while establishing a longer-term solution for all major markets

Benefits

The bank's data and metrics varied across markets, with multiple systems in use and limited ability to consolidate data in common formats automatically. Accordingly, there was little integration or consistency across reports, data collection processes were mostly manual, and inaccuracies often rendered management information unreliable. To fix these problems, the bank took these steps:

Set priorities

- Prioritized a small number of core metrics needed to support critical decisions
- Agreed on consistent definitions of metrics across markets

Developed data sets

- Used feeds, initially manual, from both global and local in-market source systems to enable central data definitions and logic
- Applied standard transformation logic to develop target data sets

Built capabilities

- Built data quality and governance into end-to-end processes
- Increased output accuracy through standardization and automation
- Scaled existing data frameworks to build new capabilities

Global Manufacturer

Here's how a global manufacturing company revolutionized its data sourcing to enhance the speed and accuracy of its strategic decision making.

Focus

Decision support

Objective

Speed up data consolidation and transformation across the organization to enable fast and accurate profitability assessments that drive business insights

Problem

Finance was unable to consistently source, report, and predict business performance at an aggregate level. Data reconciliation was hit or miss, making enterprise reporting slow and inaccurate

Solution

Implemented a modern cloud-based enterprise data lake and warehousing solution, which accelerated the company's ability to gather, process, and act on accurate information

Benefits

After struggling for years to reconcile numbers across lines of business and understand the true sources of profit, the finance organization overhauled its data sourcing, warehousing, and reporting systems. This investment enabled the firm to respond quickly to market shifts, make strategic decisions ahead of its peers, and achieve the following additional benefits:

Set priorities

- Prioritized a small number of core metrics needed to support critical decisions
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Developed data sets

- Used feeds, initially manual, from both global and local in-market source systems to enable central data definitions and logic
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Built capabilities

- Built data quality and governance into end-to-end processes
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- Scaled existing data frameworks to build new capabilities

So you're ready to improve your data.

Now what?

If you want to improve the quality of your data and boost Finance's core capabilities, start with solutions using your existing systems, with an eye toward eventually automating and enhancing how your data is developed, delivered, and consumed. Follow these six steps, and you'll be on your way.

1

Decide what insights you need to run the business. What questions do you need answered and what metrics help answer those questions? This may involve financial results or nonfinancial information related to employees, customers, products, market conditions—basically anything that can affect business outcomes.

2

Consider the tools available to collect, manipulate, analyze, and deliver necessary information. Getting your desired data to refresh automatically in real time is the ultimate goal. But in the near term, see what you can gather manually. Start with no more than 10 business questions initially so you can create visualizations of important results and explore relationships across data points. Once you begin automating your data, you can layer in more components to flesh out the picture.

3

Align your leadership team. All key parties need to agree on what will be measured, how it will be defined, who owns it, who will be accountable for producing it, and the business mandate being addressed. At heavily matrixed companies, getting everyone on board is no easy feat, but taking the time to do this up front is crucial.

4

Build your data ecosystem, working toward enabling automated data feeds, data set integration, true self-service capabilities, and new tools for insight-driven decision-making. Set your priorities based on business value and ease of implementation. Then start small with something manageable. Test out a concept in one market or line of business, create a prototype, and socialize your idea to gauge support. Be sure to involve the people who will be using the new capability you plan to introduce.

5

Equip your workforce. A data ecosystem based on next-generation digital technologies will demand new or enhanced workforce skills and capabilities, such as storytelling with data, problem-solving using advanced analytics, and business partnering. Consider ways to build or buy the talent you'll need. For more on this topic, see *Crunch time: The finance workforce in a digital world*.

6

If it's feasible, test different approaches in different markets. This will let you compare results to gauge what's best for the company long term. Yes, there's an expense associated with doing that. And yes, it may add to the overall timeline. But the downside pales in comparison to the cost of rolling out a company-wide tool that proves wrong for the business.

Set your priorities based on business value and ease of implementation. Then start small with something manageable.

Getting it right

As you set out to enhance and integrate your data sources, keep in mind the following lessons learned, based on others' hard-won experience.

Define your goal

Be clear on what you want to achieve and set your priorities accordingly

Start small

Test your ideas initially in one location with a clearly defined scope

Fail fast

If something's not working, fix it or move on quickly so you don't lose momentum

Focus on customers

Engage end users early on to ensure a new capability meets their needs

Promote adoption

Have a rollout strategy that encourages people to adopt the new solution

Address the operating model

Involve all your key partners as you define new roles, processes, ways of working, and skills needed post-implementation

The last word

For any business, big or small, achieving desired outcomes starts with good data. And new tools using artificial intelligence, machine learning, natural language processing, robotic process automation, and other emerging technologies can automate data management and improve data quality—better and faster than ever before.

You don’t need to spend a fortune to reap the benefits, and you don’t need to tie up your resources for years. Instead, set your priorities, explore your options, and take small steps you can build on over time. With a little poking around, you might be surprised at what’s possible.

Acknowledgements

Authors

Annamaria Cherubin
Principal
Deloitte Consulting LLP
Tel: +1 216 536 3763
Email: acherubin@deloitte.com

Victor Bocking
Managing Director
Deloitte Consulting LLP
Tel: +1 212 436 3191
Email: vbocking@deloitte.com

Naimisha Reddy Karakala
Senior Manager
Deloitte Consulting LLP
Tel: +1 312 486 4903
Email: nkarakala@deloitte.com

Max Troitsky
Senior Manager
Deloitte Consulting LLP
Tel: +1 215 815 9443
Email: mtroitsky@deloitte.com

Contributors

Susan Hogan
United States

Jason Dess
Canada

Dean Hobbs
United States

Lane Hayes
United States

Anoop Kuriakose
United States

Dinesh Dhoot
India

Adrian Tay
United States

Jeff Schloemer
United States

Matt Schwenderman
United States

Jessica Bier
United States

Scott Shafer
United States

Kirti Parakh
United States

Contacts

Susan Hogan
Principal, US Finance Transformation Practice Leader
Deloitte Consulting LLP Tel:
+1 404 631 2166
Email: shogan@deloitte.com

Dean Hobbs
Principal, Finance Transformation Eminence Lead
Deloitte Consulting LLP
Tel: +1 512 226 4805
Email: dhobbs@deloitte.com

Nnamdi Lowrie
Principal, Finance and Enterprise Performance Deloitte Consulting LLP
Tel: +1 213 996 4991
Email: nlowrie@deloitte.com

Jessica L. Bier
Managing Director, Human Capital
Deloitte Consulting LLP
Tel: +1 415 783 5863
Email: jbier@deloitte.com

Denise McGuigan, PMP®
Principal, Consulting, SAP Deloitte Consulting LLP
Tel: +1 404 631 2705
Email: demcguigan@deloitte.com

Varun Dhir
Principal, Consulting, Oracle
Deloitte Consulting LLP
Tel: +1 484 868 2299
Email: vdhir@deloitte.com

Matt Schwenderman
Principal, Consulting, Emerging ERP Solutions
Deloitte Consulting LLP
Tel: +1 215 246 2380
Email: mschwenderman@deloitte.com

Scott Szalony
Partner, Audit and Assurance
Deloitte & Touche LLP
Tel: +1 248 345 7963
Email: sszalony@deloitte.com

Melissa Cameron
Partner, Risk and Financial Advisory
Deloitte & Touche LLP
Tel: +1 415 706 8227
Email: mcameron@deloitte.com

Clint Carlin
Partner, Risk and Financial Advisory
Deloitte & Touche LLP
Tel: +1 713 504 0352
Email: ccarlin@deloitte.com

Ravi Gupta
Partner, Tax Management Consulting
Deloitte Tax LLP
Tel: +1 703 531 7123
Email: ragupta@deloitte.com

Ed Nevin
Partner, Tax
Deloitte Tax LLP
Tel: +1 410 576 7359
Email: enevin@deloitte.com

Mike Kosonog
Partner, Risk and Financial Advisory, Cyber
Deloitte & Touche LLP
Tel: +1 313 919 3622
Email: mkosonog@deloitte.com

Jeff Goodwin
Partner, Risk and Financial Advisory, Government & Public Service
Deloitte & Touche LLP
Tel: +1 303 921 3719
Email: jgoodwin@deloitte.com

Brian Siegel
Partner, Consulting, Government & Public Service
Deloitte Consulting LLP
Tel: +1 571 882 5250
Email: brisiegel@deloitte.com

Your contacts in Switzerland

Markus Zorn
Partner, Finance & Performance
Lead Finance & Performance Schweiz
Deloitte Consulting AG
Tel: +41 58 279 69 43
Email: mzorn@deloitte.ch

Matthias Kirschbaum
Manager, Finance & Performance
Deloitte Consulting AG
Tel: +41 58 279 7507
Email: mkirschbaum@deloitte.ch

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