Hype Cycle for Autonomous Accounting, 2023

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Initiatives: Digital Technology in Finance; Accounting and Transactional Finance Processes

The controllership function must transform to deliver real-time financial insights and increase its value to the enterprise. This Hype Cycle helps corporate controllers identify top current and emerging technologies, processes and methodologies that are shaping the future of autonomous accounting.

More on This Topic

This is part of an in-depth collection of research. See the collection:

- 2023 Hype Cycles: Deglobalization, AI at the Cusp and Operational Sustainability

Strategic Planning Assumption

By 2027, 50% of controllership functions will achieve digitally driven, process-level capacity gains to define a clear scope of judgment-based, balance-sheet-focused support activities.

Analysis

What You Need to Know

As technologies rapidly evolve to enable autonomous finance, corporate controllers seek to understand their role in reaching that goal. Controllers must lead functional transformation by leveraging new technology, aspiring to continuous accounting cycles and shifting their people's mindset and skills.

This Hype Cycle outlines a selection of innovations to help controllers:

- Selectively choose the trends that align best with their organizations and use cases.
- Develop short- and long-term roadmaps that align controllership to evolving trends.
- Build people's skills required in autonomous accounting.
- Stay ahead of the competition by anticipating changes rather than reacting to them.

The innovations presented in this Hype Cycle represent the critical themes of autonomous accounting:

- Composable technology ecosystem
- Accounting data modeling
- Continuous process
- Transformation approach and delivery
- Data governance and compliance

The Hype Cycle

This Hype Cycle features top current and emerging technologies, best practices and methodologies that support the growing trend toward autonomous accounting and help controllers meet the growing demands for their work. Although innovations listed in this earliest phase of this Hype Cycle are still emerging and have yet to prove value, others are delivering value to the market and in use by leading companies.

Composable Technology Enables a Continuous Process and Shifts Team Capabilities

Advanced technology in combination with the right human skills and development will create trust, drive the speed of adoption and contribute to a higher success rate for autonomous accounting transformations.

A composable technology ecosystem allows controllership organizations to leverage the benefits of systematically built-in accounting logic that enables the record-to-report process to be executed autonomously and continuously. Using applications that serve specific business needs that leverage modern technologies to automate work, teams spend less time on unsatisfying manual tasks and more their time on adding value to the businesses they support.

Themes in Autonomous Accounting

This year's Hype Cycle focuses on technology, accounting data modeling, continuous process, transformation delivery, and data governance and compliance. In the following, we list the critical technologies for each theme.

Composable Technology Ecosystem: Autonomous accounting depends on a composable technology ecosystem design. While executing an end-to-end accounting process, components of the composable technology ecosystem must communicate with one another and work seamlessly at scale.

- Composable ERP
- Composable applications in finance
- Financial close and consolidation solutions
- Self-integrating applications
- Process mining
- Hyperautomation in finance
- Self-service analytics

Accounting Data Modeling: Business models, accounting standards and transaction attributes must be reflected across the technology ecosystem to support seamless operational reconciliations and meet statutory and regulatory obligations. Controllers should implement best practices when designing key elements of the accounting data.

- Modern chart of accounts
- Materiality thresholds in the close process

Continuous Process: Enabled by increasingly powerful technology, accounting cycles can become nearly continuous, satisfying business needs and removing manual burden. With more frequent and accurate accounting data, accountants can now focus on moving operational accounting close tasks, such as line item accounts reconciliations, outside of the accounting close window.

- Real-time, event-based accounting
- Accounting engines

Transformation Approach and Delivery: Controllers undertaking functional transformation should leverage both internal and external partners' expertise around strategic goals definition, roadmap delivery and daily operations to maximize speed and enterprise value delivery.

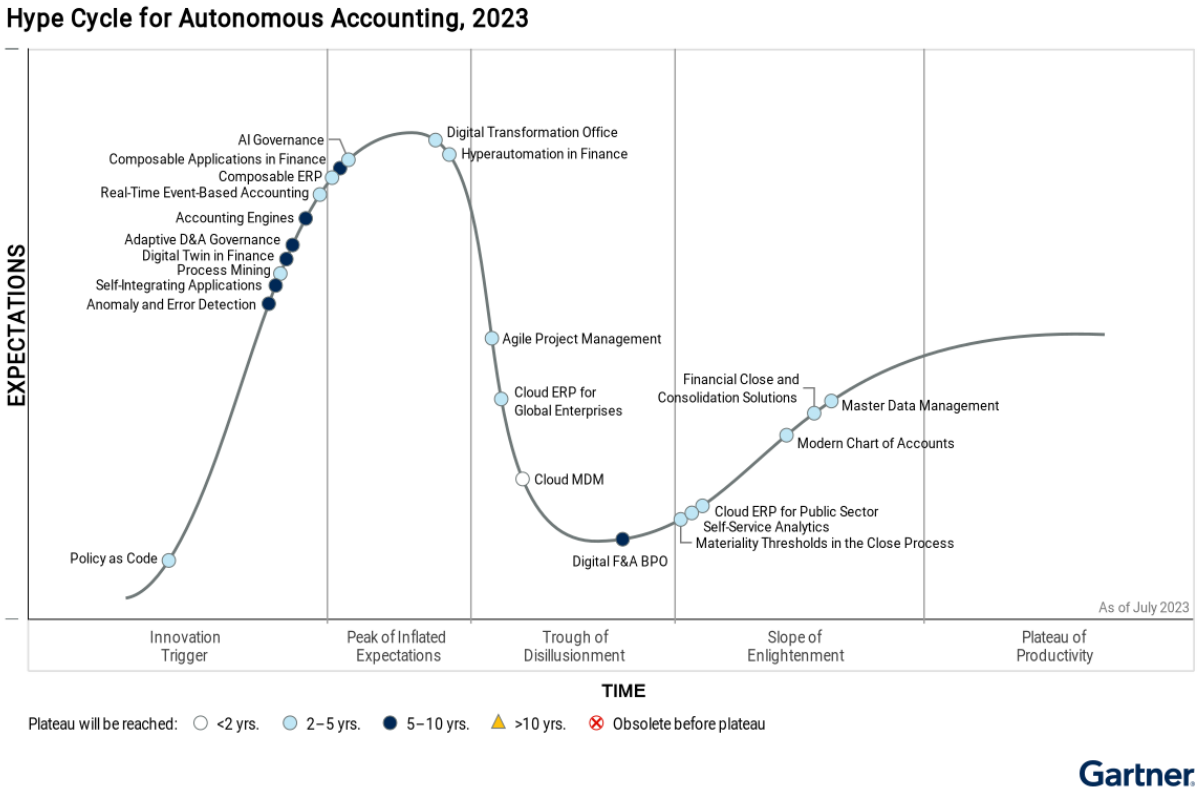
- Digital transformation office
- Agile project management
- Digital F&A BPO

Data Governance and Compliance: Increasing levels of automation create new mandates for methods and solutions supporting strong compliance, data governance, quality and completeness control within applied technologies.

- Master data management
- Cloud MDM
- AI governance
- Anomaly and error detection

- Digital twin in finance
- Policy as code
- Adaptive D&A governance

Figure 1: Hype Cycle: Autonomous Accounting



Source: July (2023)

The Priority Matrix

The Priority Matrix maps the benefit rating for each innovation, methodology or best practice against the amount of time expected to achieve mainstream adoption. The depicted placement of each technology and trend reflects an average assessment across all organizations and industries, so positions may vary for each company. Controllers should identify the profiles that are most relevant to their organization based on specific use cases and circumstances. Then, they can use the information in this Hype Cycle to guide their transformation journey.

Innovations with a near-term adoption offer less risky and foundational benefits to the controllership function. Innovations further out on the adoption horizon are considered differentiated and have the potential for significant disruption; however, they may offer competitive advantage. Controllers must emphasize seamless communication at scale in the composable technology ecosystem to optimize value delivery of autonomous accounting.

Most innovations featured in this Hype Cycle have multiple use cases. Use the provided summaries for each technology to align innovations with your specific objectives and circumstances. Drive the success and speed of adoption with a phased approach (i.e., one process at a time). Structure the roadmap to navigate obstacles and hurdles such as cultural resistance, skills and data before setting timelines.

Table 1: Priority Matrix for Hype Cycle: Autonomous Accounting

(Enlarged table in Appendix)

Benefit ↓	Years to Mainstream Adoption: Less Than 2 Years ↓	2 - 5 Years ↓	5 - 10 Years ↓	More Than 10 Years ↓
Transformational		Agile Project Management Cloud ERP for Public Sector Composable ERP Digital Transformation Office	Adaptive D&A Governance Digital F&A BPO Digital Twin in Finance Self-Integrating Applications	
High	Cloud MDM	AI Governance Cloud ERP for Global Enterprises Hyperautomation in Finance Master Data Management Policy as Code Process Mining	Accounting Engines Anomaly and Error Detection Composable Applications in Finance	
Moderate		Financial Close and Consolidation Solutions Materiality Thresholds in the Close Process Modern Chart of Accounts Real-Time Event-Based Accounting Self-Service Analytics		
Low				

Source: Gartner (July 2023)

On the Rise

Policy as Code

Analysis By: Paul Delory

Benefit Rating: High

Market Penetration: 5% to 20% of target audience

Maturity: Emerging

Definition:

Policy as code (PaC) languages express governance and compliance rules as code, so they can be enforced programmatically by automation tools. PaC languages are often domain-specific and declarative. With PaC, policies are treated as software, making them subject to version control, code review and functional testing. The most mature PaC tools can render any business logic in code. You can use them today to enforce infrastructure compliance, authorization, Kubernetes admission control, and more.

Why This Is Important

In the most mature automation pipelines, infrastructure and operations (I&O) engineers mostly spend time on optimization, governance and compliance. They no longer build infrastructure; that work has been automated and turned over to others. Now, the I&O function builds the guardrails around the infrastructure services that their end users consume. I&O must align with security and compliance teams. PaC brings policy enforcement into their automation pipelines, while preserving a separation of duties that mirrors a typical IT org chart.

Business Impact

Policy as code improves:

- **Security, compliance and automation:** PaC combined with infrastructure automation implements policies automatically, with implicit compliance guarantees.
- **Alignment of security and operations teams:** PaC allows security and compliance teams to interface directly with automation pipelines to ensure conformance.
- **Visibility and auditability:** PaC provides both documentation of policies and evidence they are being enforced.

- **Time and effort spent:** PaC means less toil for operators.

Drivers

- **PaC tooling:** Several dedicated PaC tools are now on the market, many of them are open-source. The Open Policy Agent, a Cloud Native Computing Foundation project, has become the *de facto* standard for PaC. Indeed, even some other PaC tools now use Open Policy Agent policies alongside or instead of their own policy engines.
- **Increasing regulation:** New regulations such as GDPR have increased both the difficulty of compliance and the pressure on compliance teams. PaC allows compliance teams and auditors to document their policies in detail, and to verify that they are being enforced.
- **Security breaches:** Similarly, a spate of newsworthy security breaches at public companies — caused by infrastructure misconfigurations — has put every IT organization's security and compliance practices under increased scrutiny. No I&O team wants its security failures to be the reason for its company getting negative headlines.
- **Growth of DevOps and DevSecOps:** More and more companies are embracing DevOps and DevSecOps — which means more and more companies are encountering the hard governance problems of automation. Many teams that implement infrastructure as code quickly are finding that they need better policy enforcement, and PaC can help.
- **Cloud optimization and cost control:** Beside their benefits for security and compliance, PaC tools can also be used to enforce the build standards for infrastructure, including budgets. In the public cloud, where oversized or unnecessary infrastructure incurs direct out-of-pocket costs, programmatically enforced policies can help to control spending.

Obstacles

- **Scarcity of downloadable content:** PaC tools will not gain real traction until they have an extensive library of community-generated content. Ideally, users would simply download the policies they need from a free, public repository, rather than having to write their own policies. Over time, as the user base expands and commercial offerings see increased adoption, PaC tools will reach a critical mass of downloadable content that supports real-world use cases.

- **Skill set:** Many I&O professionals lack the skills to operate automation and PaC tools effectively. Gartner clients routinely report that their automation and policy management are hindered primarily by people, not tools. PaC will magnify these existing skills challenges.
- **Organizational inertia:** PaC promises improved collaboration between I&O and security or compliance teams. But in some organizations, this change would be unwanted. Internal resistance of this kind will slow the rate, scope and scale of PaC initiatives.

User Recommendations

- **Start small:** Choose a pilot use case where PaC is likely to provide real business benefits, expanding to others once PaC has proven its value.
- **Upskill staff:** PaC languages are not always intuitive. Technical staff will need practice to reach proficiency.
- **Prioritize existing templates:** Focus your PaC efforts on use cases that have ready-made implementation templates — ideally, publicly available downloadable content. For example, almost every PaC tool on the market has a canned implementation of the CIS benchmarks.
- **Break down team silos:** Use PaC to build a common workflow for automation and policy enforcement that spans I&O, security and compliance teams.
- **Integrate PaC into automation pipelines:** Use PaC to build guardrails for automation tools, so that they cannot take actions that are out of compliance.
- **Measure before and after:** Use observability tools and value stream mapping to define your starting state, then compare it to the end state. Collect real data to quantify the value of PaC.

Sample Vendors

HashiCorp; Palo Alto Networks; Progress; Pulumi; Styra

Gartner Recommended Reading

Using 'Policy as Code' to Secure Application Deployments and Enforce Compliance

How to Protect Your Clouds With CSPM, CWPP, CNAPP and CASB

Innovation Insight for Continuous Compliance Automation

Innovation Insight for Cloud-Native Application Protection Platforms

Magic Quadrant for DevOps Platforms

Anomaly and Error Detection

Analysis By: Mark D. McDonald

Benefit Rating: High

Market Penetration: 1% to 5% of target audience

Maturity: Emerging

Definition:

Anomaly and error detection in finance leverages AI and ML to identify errors, mistakes or unusual activity, as well as violations of internal policies, compliance rules and accounting standards. Such tools may be on-premises or cloud-based, and may be stand-alone solutions or integrated with accounting and reporting systems (e.g., ERP). Solutions report anomalies and errors in real time or via periodic batch processing, allowing users to take investigative or corrective actions on findings.

Why This Is Important

Finding and correcting errors grows increasingly difficult for finance departments as data volume and complexity grow. New rules, regulations and accounting policies make compliance challenging and increase the chances of embarrassing violations and restatements. By leveraging AI and automating anomaly and error identification, finance teams spend time supporting business objectives rather than fixing problems and responding to audit findings.

Business Impact

Anomaly and error detection offers:

- **Early detection of problems** before they become time-consuming, frustrating, costly and embarrassing to correct
- **Error-free and compliant financial results** that build stakeholder trust and a solid company reputation

- **"Finding-free" audit reports** that require no punch list of time-consuming follow-up actions
- **Increased leadership confidence in the finance function** and an assurance that published financial statements are consistently and reliably accurate

Drivers

- **Increased complexity:** Consistent increases in data volume increase the complexity of managing that data. Increased volume and complexity lead to more errors that are difficult to uncover.
- **Cost and productivity pressure:** Increased pressure to reduce costs forces financial leaders to look for cost-cutting measures across all financial processes. By using AI-driven tools to detect errors early, fewer resources are needed to find and correct mistakes, allowing finance staff to spend more time on business support. Additionally, consistent adherence to statutory accounting guidelines and policies reduces the hourly cost of audit support.
- **Reputation:** Stakeholders demand financial integrity and financial statements they can rely on. By ensuring that results are integral, companies avoid reputation-damaging restatements.
- **Advancements in AI and machine learning (ML):** Increased accessibility of AI and ML is motivating vendors to leverage these techniques and develop effective and easy-to-use platforms that require minimal user training and implementation effort.
- **AI and ML curiosity:** CFOs are actively exploring the benefits of AI and ML in the finance workflow. Using anomaly and error detection software allows leaders to observe the benefits of AI without a large project or disrupting workflows.
- **Increasing effectiveness of external auditors:** Some larger audit firms are using AI to lower costs and find a larger number of detailed anomalies and errors. This forces audit clients to implement commensurate tools to keep up.

Obstacles

- **AI skepticism:** Negative AI media coverage prevents widespread acceptance of AI-driven tools and processes.
- **Establishment resistance:** Tools that impact the revenue stream of large audit firms will encounter certain resistance. Regulatory agencies will also challenge changes to established control processes.
- **Lack of AI experience:** Without AI experience, leaders struggle to relate AI's advantages with business benefits and to integrate these tools into legacy workflows.
- **Immature market:** A lack of clear market segments and benchmarked capabilities leaves this new era of AI-driven solutions off company radars.
- **Legacy system investment:** Years of sunk capital in tailored, rules-driven systems drive a falsely optimistic sense of security that these systems will adequately handle growing data volumes and complexity.
- **Lack of ROI commitment:** An inability to promise ROI for AI-driven software solutions drives hesitation when making investments.

User Recommendations

- Isolate the areas of finance processes with the largest number of and most costly errors to identify where anomaly and error detection has the largest potential impact.
- Use the cost of errors as a baseline for potential savings. Choose recent examples and assess their cost. Consider costs like late delivery penalties and lost revenue from internal mistakes. Other direct costs may include the time charged by external auditors to follow up on audit findings.
- Search for external vendors that can help. Consult a Gartner analyst to help narrow your search.
- Engage a shortlist of possible vendors in a live demonstration of their tools to evaluate them on the efforts needed to provide the tool with sufficient data and whether the tool addresses your process needs. Include an assessment of whether the software's output provides actionable information.
- If no vendors can help with your specific use case, engage your internal advanced analytics department to build custom solutions.

Sample Vendors

Ai XPRT; AppZen; AuditMap; MindBridge; Oversight

Process Mining

Analysis By: Marc Kerremans

Benefit Rating: High

Market Penetration: 5% to 20% of target audience

Maturity: Adolescent

Definition:

Process mining tools are designed to discover, monitor and improve business operations and processes by extracting knowledge from events captured from systems, applications and devices, in order to deliver visibility, understanding and insights. Process mining includes automated process discovery, conformance checking, social network/organizational mining; automated construction of simulation models, model extension, model repair, case prediction, and history-based recommendations.

Why This Is Important

Process mining provides visibility, analysis and understanding about business operations by providing near-real-time information to all end users about how they are currently performing, whether their processes are compliant, and what could be improved. If process mining tracks clients and their interactions, and their touchpoints with the organization as the main object rather than an order, invoice or request, then this can be seen as customer journey mining. These customer interactions are subsequently connected to internal operations.

Business Impact

Process mining provides a deeper understanding of previous customer contacts and underlying processes in order to enhance current and future interactions by understanding and aligning the customer's intent and the objective of the business. Showing which process improvements are necessary to meet and exceed customer expectations, process mining helps organizations in addressing how they can actively impact customer experience and customer retention through internal operational improvements.

Drivers

- **Digital business:** In this era of digital business, business and sales leaders need a way to reflect on how new technological capabilities can provide value to the business and, ultimately, to the customer. Process mining can show how and where to activate these capabilities to create business value. Aligning and adapting these processes with client interactions is imperative to achieve targeted business outcomes.
- **Artificial intelligence (AI):** With the use of AI and advanced machine learning algorithms, data acquires meaning, and new and powerful insights can be derived from it. A powerful example of this data science in action, process mining shows how algorithms can be used as a mechanism to capture knowledge and insight in a packaged form that can be simply reused in a consistent fashion.
- **Task automation (RPA):** Process mining can complement RPA perfectly by assessing the processes to which tasks belong, and identifying “hot areas” in the organization, where a lot of effort is wasted in repetitive tasks. This results in long-term sustainable business value and averts the shortcomings of a short-term perspective focused on large, one-off cost savings.
- **Hyperautomation:** Not only is process mining a fundamental part in creating visibility and understanding before you automate. It also visualizes how different islands of automation are connected, and how continuously implemented and connected automation can be improved through its monitoring capabilities.
- **Business operations resilience:** Business operations resilience is the ability to alter operations in the face of changing business conditions based on a seek-model-adapt model. The techniques underlying process mining provide a new and enhanced way to encompass the sense and model capabilities. Based on available day-to-day operational data, the advanced process mining algorithms provide an accurate model of the ways of work in a format that can be understood by anyone in the organization.

Obstacles

Obstacles that have kept process mining from a faster adoption can be classified into two main categories: Lack of awareness and misunderstandings.

Lack of awareness:

- After being considered for years as a purely academic technique, the collaboration of emerging process mining vendors with well-known enterprise applications, such as SAP, have heavily promoted process mining and shaped the process mining market.
- Recently process mining has moved into areas other than process discovery, such as customer interactions and social networks. It has even spread into areas such as Internet of Things (IoT), manufacturing and logistics distribution networks, supply chains, which have demonstrated sustainable value-creating capabilities of process mining.

Misunderstandings:

- Process mining needs application log files.
- Our organization is not mature enough.
- It is all about IT.
- Process mining itself improves processes
- Employees are monitored.
- Our organization has many manual activities.
- Our organization doesn't have the data.
- Our organization already has process maps.
- It is hard to justify the investment.

User Recommendations

- Improve visibility and understanding of the actual performance of business operations, by investing in process mining. Actual quantitative data is delivered in a context that not only reveals information about a process, but connects this data to other constituents in a value chain, such as data about clients.
- Create awareness and inspire business and operational colleagues by introducing small, short-term pilots. Start a pilot on activities where the data is easily available. This starter project will already deliver value and will provide insights in where the next iteration needs more detailed data.
- Explore use cases that go beyond traditional mining use cases by targeting business operations and interactions with external parties such as customers. This can be seen as customer journey mining.

Sample Vendors

ABBYY; Appian; Apromore; BusinessOptix; Celonis; IBM; Microsoft; QPR Software; SAP Signavio; Software AG

Gartner Recommended Reading

Magic Quadrant for Process Mining Tools

Critical Capabilities for Process Mining Tools

Business Case for Implementing Process Mining

Self-Integrating Applications

Analysis By: Keith Guttridge

Benefit Rating: Transformational

Market Penetration: Less than 1% of target audience

Maturity: Embryonic

Definition:

Self-integrating applications will use a combination of automated service discovery, metadata extraction and mapping, automated process definition, and automated dependency mapping to enable applications and services to integrate themselves into an existing application portfolio with minimal human interaction.

Why This Is Important

Integrating new applications and services into an application portfolio is complex and expensive. Gartner research shows that up to 65% of the cost of implementing a new ERP or CRM system is attributable to integration. The technology for enabling applications to self-integrate exists in pockets, but no vendor has yet combined all the elements successfully. As applications develop the ability to discover and connect to each other, the amount of basic integration work will dramatically reduce.

Business Impact

Self-integrating applications can:

- Improve agility, as the time to onboard applications and services is massively shortened.
- Cut costs by up to 65% when onboarding new applications and services.
- Reduce vendor lock-in, as platform migration becomes simpler.
- Improve the ability to focus on differentiation and transformational initiatives, as the “keeping-the-lights-on” burden is dramatically reduced.

Drivers

- Cloud hyperscalers provide features such as service discovery, metadata extraction, intelligent document processing and natural language processing.
- Automation or integration vendors provide features such as intelligent data mapping, metadata extraction, next-best-action recommendations, process discovery and automated decision making.
- SaaS vendors provide features such as process automation, packaged integration processes, portfolio discovery and platform composability.
- In the new era, intelligent application portfolio management is placed on top of augmented integration platforms in order to properly address the challenge.
- Generative AI simplifies the build process to create integration processes.

Obstacles

- Embedded integration features within SaaS are good enough to enable organizations to get started quickly, thus stalling investment in improving self-integration capabilities.
- Generally, organizations are not well aware of the availability of augmented integration technologies for enabling self-integrating applications. Many organizations still view integration as a complex issue requiring specialist tools.
- There is not a clear market leader that is looking to push this technology forward as the major application vendors look to protect their customer bases.
- Complex scenarios across multiple datasets and service interfaces are too challenging for the current technology. Organizations place too much trust in the solution to do the right thing. Ownership and visibility of the integrations might become contentions within the organizations.

User Recommendations

Software engineering leaders responsible for integration should:

- Ask your major application vendors about the interoperability of applications within their portfolios. This is the area where self-integrating applications are most likely to emerge first.

- Investigate integration vendors that have augmented artificial intelligence features to automate the process of onboarding applications and services into a portfolio.
- Manage your expectations for ease of integration. Self-integrating applications will provide just enough integration with the rest of the application portfolio to enable a new application to work efficiently.
- Keep track of governance capabilities. Who can authorize access? Has the appropriate observability been established? Is everything fully audited? Does something need to change? An organization's integration landscape is an ever-evolving environment, and each integration has a life cycle that needs to be maintained.

Sample Vendors

Boomi; IBM; Microsoft; Oracle; Salesforce; SAP; SnapLogic; Tray.io; Workato

Adaptive D&A Governance

Analysis By: Saul Judah

Benefit Rating: Transformational

Market Penetration: 1% to 5% of target audience

Maturity: Emerging

Definition:

Adaptive data and analytics (D&A) governance is an organizational capability that enables context-appropriate governance styles and mechanisms to be applied to different D&A scenarios to achieve desired business outcomes.

Why This Is Important

As organizations accelerate or scale out their digital business initiatives, ecosystems and platforms, their ability to deliver expected business value is limited by their current business practices — in particular, their governance of D&A assets. Despite greater diversity and complexity in business scenarios than ever before, D&A governance has typically continued to adopt a single, control-oriented approach, which is often unresponsive to business needs and causes or reinforces data silos.

Business Impact

Adaptive D&A governance has the potential to be a transformational change agent for digital business. It enables application of different governance styles (control, outcome, agility and autonomous) to different D&A scenarios, depending on business context. This allows better enterprise collaboration in D&A initiatives, allowing enterprises to respond faster to opportunities and become more competitive, resilient and risk-aware.

Drivers

- As levels of risk appetite and demands for growth have risen in organizations, so have expectations for flexibility and agility from D&A initiatives to meet these needs. As a result, chief data and analytics officers are increasingly turning to adaptive D&A governance practices that enable the greater flexibility, scale and resilience needed in D&A initiatives to deliver dynamic business outcomes.
- Both D&A and business leaders recognize that increased investment in infrastructure, such as D&A platforms, cannot yield the expected ROI without corresponding improvement in D&A governance practices.
- Organizations maturing in D&A increasingly recognize the key role that business leaders play in driving their governance initiatives. Business demand for greater flexibility, agility, responsiveness and interconnectedness of D&A requires better governance practices than currently exist. This, in turn, is leading D&A leaders to explore adaptive D&A governance.

Obstacles

- Although D&A governance practices are maturing in many organizations, maturity is still lower than in other areas, such as data management and analytics. Many organizations still take an IT-oriented, center-out, single-style approach to governance, which resembles compliance rather than governance. This is outdated and wrong and needs to change.
- Poor data literacy is prevalent in organizations. Business leaders often fail to understand or accept accountability for the information assets they create, instead expecting their data office (typically residing in IT) to sort out their data. When data offices initiate governance initiatives, business leaders fail to engage effectively, or at all.

User Recommendations

- Use the IT Score for Data & Analytics to evaluate your maturity and readiness to enhance governance capabilities. Don't establish agility and autonomous governance without foundations for control- and/or outcome-based governance.
- Create a proof-of-concept (POC) initiative to test the applicability of one of the advanced governance styles (like an autonomous governance style) in your environment; evaluate the business outcomes and value, emerging risks, technological limitations and cultural barriers to wider adoption.
- Engage senior business executive leadership to discuss the results of the POC initiative. Create a business case and strategic roadmap to establish adaptive D&A governance.
- Establish the control and outcome styles of adaptive governance first; evolve to the agile and autonomous styles subsequently. Use minimum governance, focusing on limiting the scope of data, analytics and business processes to those that deliver greatest business value and organizational outcomes.

Gartner Recommended Reading

Data and Analytics Leaders Must Use Adaptive Governance to Succeed in Digital Business

2022 Strategic Roadmap for Data and Analytics Governance

Adopt SMART Principles for Adaptive Data and Analytics Governance

Next Best Actions to Improve Your Data and Analytics Governance

Digital Twin in Finance

Analysis By: Mark D. McDonald

Benefit Rating: Transformational

Market Penetration: 5% to 20% of target audience

Maturity: Emerging

Definition:

A digital twin is a virtual representation of a real entity that can be a physical object, a process, an organization or a person. It relies on sensors or other monitoring technologies to collect the state of an object to build a digital representation. Using a digital twin adds value by testing changes to the twin before implementing them on their real-world counterpart. Finance can use digital twins to represent business processes and assess the impact of changes before implementing them.

Why This Is Important

Enterprises are using digital twins to create virtual representations of entities or activities for process, cost, revenue or other business objectives. Examples include improving operational efficiency of a power plant, or identifying opportunities for supply chain improvement or areas to model and improve business processes. Technology providers are developing new revenue streams and customer engagement by developing and selling digital-twin-enabling products and services.

Business Impact

Finance is exploring digital twins to:

- Identify the impact of decisions before executing them. For example, a digital twin of the supply chain can quantify the financial impact of alternative decisions.
- Drive new revenue models by reselling data collected by the digital twin.
- Identify hyperautomation opportunities by simulating process changes on a digital twin.
- Reduce risk of fraud and noncompliance by monitoring and flagging live transactions that do not match the behavior of the digital twin.

Drivers

- Digital twins' capabilities are more accessible to organizations due to rapidly evolving simulation and modeling capabilities, better interoperability and access to IoT sensors, and availability of tools and computing infrastructure to access and support large datasets.
- In Gartner's 2022 Finance Technology Bullseye Survey, 21% of respondents report deploying, piloting or exploring digital twins. Finance is accelerating the adoption of digital twins to support a variety of business outcomes: increasing process efficiency, optimizing supply chain costs, supporting new business models, identifying risk, supporting new investments, and driving faster and more effective decision making.
- Finance is exploring digital twins in multiple use cases: supporting investment decisions, screening risk, modeling new processes and exploring scenarios.
- Specific asset-intensive industries, such as oil and gas, manufacturing, automotive, and utilities have demonstrated effective use of digital twins to improve business operations through remote monitoring of assets.
- Finance institutions, banks and fintech companies are also among the early adopters of digital twins within customer support, fraud detection, lending decision making, credit risk assessment, stress tests and wealth management functions.

Obstacles

- Few enterprises have the skilled cross-functional teams — business, finance and technology — required to develop digital twins. These teams conceive, create and maintain digital twins, including the models that are synchronized to the real entities.
- Digital twins require a blend of sensors and machine learning (ML) algorithms, which challenges most finance teams. The difficulty in finding the skills to develop and maintain these solutions prevents many organizations from starting.
- Loosely defined business objectives, rapidly changing circumstances and difficulty setting a digital twin's scope prevent finance from launching digital twin projects.
- Lack of data quality across business and operational data drives skepticism in the digital twins results, driving lower adoption of the technology within finance.
- Digital twins require a cohesive regulatory, compliance and legal framework, which is a concern for CFOs and others in the C-suite when planning large-scale digital twin deployments.

User Recommendations

- Work with IT and business leaders to establish realistic expectations for how digital twins can support organization objectives, and define KPIs to measure success.
- Engage the business unit to identify champions, get budget support and co-create the digital twin strategy. Avoid digital twin projects that lack a business sponsor and objective, as they will waste resources and undermine adoption.
- Isolate the areas of finance processes by applying simulation on the digital twin to identify the largest opportunity for hyperautomation.
- Identify operational technology (sensors) and information technology (ML) gaps and build a roadmap to either procure or internally build the skill sets needed to close the gap.
- Prepare a long-term governance strategy that covers data, regulatory and compliance framework to complete digital twin deployments.

Sample Vendors

Alibaba Cloud; Altair; Ansys; Element; e-Magic; Google; KONGSBERG; TADA

Gartner Recommended Reading

2023 Finance Technology Bullseye Report

Quick Answer: What Is a Digital Twin?

Market Guide for Technologies Supporting a Digital Twin of an Organization

Accounting Engines

Analysis By: Irmina Melarkode

Benefit Rating: High

Market Penetration: 5% to 20% of target audience

Maturity: Emerging

Definition:

Accounting engines are solutions that enable organizations to calculate, manage and reconcile financial activities by leveraging internal and external data sources. Users can examine two or more sets of information requiring reconciliation, with predefined business models and accounting standards that are configurable in the solution. The solution supports autonomous accounting, increases reliability of the records with audit trails, effortless compliance and promotes analytical reviews.

Why This Is Important

Due to emerging mandates for near real-time data needs from stakeholders, the controllership function must transform from looking at past practices in the closing process to real-time financial intelligence so they can bring high value judgment-based, balance-sheet-focused inputs to the enterprise. Accounting engines are removing the burden of manual processing of high-volume work ensuring reliability and accelerating quality of reconciliations, financial reporting and compliance.

Business Impact

Accounting engines support:

- Continuous accounting process by moving operationally heavy tasks outside of the close window and shortening the days to close the timeline.

- Management of constantly increasing complexity of financial data, accounting standards and business models.
- Acceleration and reliability of financial reporting.
- Increased quality of accounting data by the elimination of human data manipulation.
- Compliance and audit trails for data sources, configuration and any changes within these.

Drivers

- Emerging mandates for near real-time data needs from stakeholders.
- Complexity of financial data, accounting standards and models increases manual effort in days to close process
- High volume of manual work takes controllership teams capacity away from personal development of future digital and judgment-based working skills
- Standard ERP solutions are limited, considering the complexity of accounting models. Therefore, controllers are seeking more robust solutions to support their business operations.

Obstacles

- The implementation approach is not clear because of the complexity of each enterprise. It is difficult to apply a standard approach that guarantees the adoption.
- Nonintentional architecture of composable technology ecosystem where applications are not communicating and collaborating with each other.
- Missing digital skills in the controllership team to understand the technology options, their negative or positive impacts to their operations as well as ability to provide high-quality functional requirements.
- Challenging ROI as technologies and implementation are complex.
- Trust of Controllers and their Teams that system will execute and complete the accounting close without human intervention. The finance team is accountable for accuracy of financial data where with current Controllership and IT Teams design and skills that trust is limited.

User Recommendations

- Drive agility by adopting a composable technology strategy that transforms their technology portfolio to be modular, flexible and adaptive to business needs.
- Assess your current technology ecosystem considering the business and functional goals to prioritize investments of time and money.
- Apply agile project management as execution methodology to faster deliver value, learn and improve future deployments.
- Invest in controllership team digital skills development to provide the highest quality of functional requirements for technology solutions.
- Search for external vendors that can help in designing the technology ecosystem and specific solutions that are enabling autonomous accounting processes. Consult a Gartner analyst to help narrow your search.

Sample Vendors

BlackLine; FloQast; Gappify; Redwood; Wolters Kluwer

Gartner Recommended Reading

Drive Agility by Deploying a Composable Finance Technology Strategy

Finance IT Scope and Team Design Benchmarks

Prepare the Accounting Close for Digital by Making It Resilient

Close Process Time Analysis Tool

Characteristics of Companies With a Fast Accounting Close

Real-Time Event-Based Accounting

Analysis By: Irmina Melarkode

Benefit Rating: Moderate

Market Penetration: 5% to 20% of target audience

Maturity: Adolescent

Definition:

Real-time event-based accounting is the practice of a system-enabled ability to record financial transactions when accounting-relevant events occur. To record them appropriately, transaction attributes, predefined business models and accounting standards are embedded into the composable technology ecosystem (e.g., ERP). This enables exposure of real-time accounting data to other solutions of that ecosystem such as financial close and consolidation or FP&A for further business activities.

Why This Is Important

Recording financial transactions as accounting-relevant events occur brings autonomous accounting to fruition and fulfills growing mandates for near-real-time data needs from controller stakeholders (e.g., FP&A). It shortens the accounting close length by shifting operationally heavy tasks such as high-volume reconciliation processes outside of the core close window, yielding a nearly continuous close.

Business Impact

Real-time event-based accounting supports:

- Nearly instantaneous accounting data availability for controllership teams and their stakeholders, supporting high-value decision making
- Continuous accounting processes that minimize or eliminate operationally intensive work and accelerate the close window
- Autonomous accounting via composable technology ecosystem applications that process accounting tasks simultaneously
- Freeing controllership teams' capacity for personal development of their digital skills and delivery of high-value activities to support balance-sheet-focused insights

Drivers

- The complexity and poor foundational setup of the financial data controllership teams must process requires additional days on validation, accounting and adjustments.
- Business needs for real-time accurate financial insights are increasing while controllership teams are already at capacity.
- Macroeconomic and industry-level volatilities are accelerating the urgency for finance to close gaps in balance sheet decision support such as working capital management where controllership teams offer unique expertise.
- Composable technology ecosystem applications are not reaching their full potential due to the unavailability of real-time accounting data.
- A shift from days to close to on-demand close creates pressure on controllers and their teams to deliver fast and accurate insights.

Obstacles

- Companies have developed “good enough” processes to post accounting data to corporate systems (e.g., ERP) in less frequent batches with less data granularity to avoid the system performance issues that often result from higher frequency submissions.
- Controllership teams lack the digital skills to fully understand the technology options, their impacts (positive and negative) to operations and the best approach to defining clear requirements.
- Current operational and behavioral drivers, such as high volumes of manual work and a general staff unwillingness to innovate, are hampering how processes are executed and transformed.
- Organizations find it difficult to accurately quantify the ROI of a system setup change as opposed to a more straightforward technology implementation.

User Recommendations

- Target the most time-consuming accounting close process and quantify the degree to which increasing the frequency of accounting postings outside the core close window could remove or minimize operational burden.
- Measure the data granularity of accounting postings and attributes in light of increased frequency. These must support continuous processes and data flows across the composable technology ecosystem.
- Address and migrate one process at a time. Analyze, implement changes, learn, improve and stabilize before progressing to the next process.
- Adjust the accounting processes in line with the new setup, including people skills and organizational structure considerations.
- Explore external vendors that can help design a technology ecosystem to enable autonomous accounting processes. Consult a Gartner analyst to help narrow your search.
- Invest in controllership team digital skills to provide the highest quality of functional requirements in technology strategy, maintenance and innovation.

Gartner Recommended Reading

Drive Agility by Deploying a Composable Finance Technology Strategy

Prepare the Accounting Close for Digital by Making It Resilient

Infographic: Identify Drivers of Effort in the Close Process

Characteristics of Companies With a Fast Accounting Close

Close Process Time Analysis Tool

At the Peak

Composable Applications in Finance

Analysis By: Irmina Melarkode, Nisha Bhandare

Benefit Rating: High

Market Penetration: 1% to 5% of target audience

Maturity: Emerging

Definition:

Composable applications are built, in part or in whole, as flexible assemblies (compositions) of software components that represent well-defined business capabilities, packaged for programmatic access (PBCs). The intent of the modularity is increased flexibility in the application's own delivery, business-driven evolution and extension, plus the components' availability for composition across applications.

Why This Is Important

As business environments become increasingly dynamic, finance teams struggle to adapt with complex and siloed technologies. Composability organizes finance technologies into modular application building blocks that deliver well-defined finance capabilities in support of specified business outcomes. By embracing composable technologies, finance can improve speed and agility while enabling innovation within the function.

Business Impact

Introducing composability in technology strategy enables finance organizations to make decisions about where and how to invest in technology, which will generate a faster and agile response to emerging business needs. Technology investments, when paired with composable thinking, will provide a notable improvement in the function's resilience, adaptability and readiness to change.

Drivers

- In a continuously changing business context, demand for business adaptability directs organizations toward technology architecture that supports fast, safe and efficient application change.
- The demand for active participation of business decision makers like finance in the design of their digital experiences promotes technology adoption.

- The emerging business model of industry clouds promotes the architecture of modularity and financial processes composition inside and across the composable technology ecosystem.
- The increasing number of vendors offering API-centric SaaS builds up a portfolio of available finance capability-centric packaged application — promoting their use as building blocks of composable business applications.
- Rapid innovations in technology, such as native AI applications, are rendering traditional technology selection and implementation practices inflexible, outdated and difficult to adapt to business disruptions.
- With rapid disruptions within the business environment and technology industry, finance is leaning in on technology to drive two outcomes: (1) innovate finance processes to adapt quickly to the accelerating pace of business change and (2) standardize finance processes to enable cost optimization.

Obstacles

- With limited experience of composable thinking, finance gravitates toward selecting large and complex technologies that drive rigidity in the technology environment and slow down the transition toward composability.
- Finance's technological conservatism leads to an outdated, one-size-fits-all approach in governing all composable technologies, which impedes agility and innovation in the function.
- Limited practice of business-IT collaboration for application design delays the effective composable design that depends on the complementary expert talents in multidisciplinary fusion teams.
- Most legacy applications can participate in composition via APIs and/or event streams, but their architecture provides only minimal autonomy, delaying the full positive effect of composable architecture.
- Without a modern application integration strategy, organizations will struggle to maintain and evolve multiple composable applications in their environment, delaying the benefits of autonomy and agility.

User Recommendations

- Break down business strategy into key outcomes and identify the specific finance capabilities needed to support these outcomes.

- Reorganize the technology landscape into an ecosystem of modular building blocks that support each finance capability by using a composable finance technology strategy.
- Align finance technology within the three layers of the composable technology architecture — core, differentiated or innovative — to ensure decisions around technology strategy, investment and deployment support the right objective.
- Gradually modernize (or replace) existing applications toward the architecture of business-centric modularity.
- Promote modular thinking as the means to great flexibility in business and software innovation.
- Prioritize forming business-IT fusion teams to support faster and more effective adaptive change of business applications.
- Use cases include: procure-to-pay suites, cash management solutions, integrated invoice-to-cash applications, accounting engines.

Gartner Recommended Reading

Drive Agility by Deploying a Composable Finance Technology Strategy

Build a Finance Capability Roadmap as the First Step in Your Composable Technology Journey

Design an Ecosystem of Composable Finance Technologies to Accelerate Your Digital Transformation

Composable ERP

Analysis By: Robert Anderson, Neha Ralhan

Benefit Rating: Transformational

Market Penetration: 5% to 20% of target audience

Maturity: Adolescent

Definition:

Composable ERP is an adaptive technology strategy that supports the foundational administrative and operational digital capabilities that enable an enterprise to keep up with the pace of business change. It is not a single, off-the-shelf product; rather, it defines a strategic technology framework in which application and platform capabilities support dynamic and user-centric enterprise business capabilities via a networked solution.

Why This Is Important

ERP strategies are evolving from more than just loosely coupled applications into a mesh of ERP applications, platforms and non-ERP vendors. Composable ERP strategies fuel growth, flexibility and profitability while minimizing risks, costs and disruption of business operations. They enable CIOs to take a future-proof approach to ERP that can support changing business needs without compromising application stability.

Business Impact

The ability to deliver value is changing radically, due to the influx of new technologies, mindsets and practices. The main changes are:

- **Business outcomes** — A shift of focus away from "how" to invest to "why" to invest and what can be achieved.
- **Complexity** — It is a must to accept complexity and work toward managing ERP. Trying to address the challenge through a single-vendor approach may be a mistake.
- **Customer value creation** — How to understand and keep pace with customers' demands.

Drivers

Organizations need to rapidly assess and create an ERP strategy that is capable of enabling composability. The key drivers for this journey are:

- Application flexibility. Organizations require ERP application strategies to be more flexible than the traditional monolithic application capabilities. They demand highly configurable business applications complemented by business technology platforms that enable them to compose, recompose and extend applications as business strategies change.

- Hybrid integration. In order to address changing business requirements, organizations seek hybrid integration approaches that more easily enable business value beyond the borders of monolithic ERP.
- Faster achievement of business outcomes. The days of five-year waterfall ERP implementations are over. Organizations are demanding more agile approaches to ERP implementation that can address the demands of a rapidly changing digital world, while minimizing risks, costs and disruption of business operations.

Obstacles

- Software vendors are still discovering the impacts and directions of this customer-led future state. Tactical roadblocks, such as licensing models and out-of-the-box integration capabilities, remain barriers to a more-open ecosystem. Many still treat composable ERP as a product story, rather than a strategic approach led by customers.
- Systems integrators (SIs) continue to grapple with how to position and align themselves in support of frameworks in which application and platform capabilities can be fused to deliver business value. Most continue to focus on vendor-led technology modernization, as opposed to a customer-driven, composable enterprise approach.
- Articulating business value hasn't always been a priority for IT initiatives. Therefore, the engagement between IT and the business to discuss an enterprise IT-enabled vision focused on delivering value is not a trivial exercise for most and is a notable barrier.

User Recommendations

- Ensure that business and IT work as a single unit to create a composable ERP strategy to ensure it delivers business value and creates possibilities for enabling agility for the longer run.
- Establish the scope of what ERP means — and should mean — for your organization by synchronizing capabilities with business values, plans, desired outcomes and experiences. Reimagine ERP to align it with the emerging generation of applications, architectures and technologies. Avoid the temptation to revert to an old, monolithic ERP mindset.
- Exploit the emerging technologies across all pace layers, based on your organization's growth, transformation or optimization goals.
- Invest in enabling technologies along the core ERP journey. AI, low-code/no-code, integration capabilities, master data management (MDM) and security discussions must all be part of a new composable ERP strategy.

Gartner Recommended Reading

ERP Primer for 2023

Predicts 2023: In a Period of Global Upheaval, Will ERP Come to the Rescue?

Two-Tier ERP: A Useful, Composable ERP Strategy for Complex Organizations

2022 Strategic Roadmap for ERP

What CIOs Must Do to Avoid Disappointing ERP Initiatives

AI Governance

Analysis By: Svetlana Sicular

Benefit Rating: High

Market Penetration: 1% to 5% of target audience

Maturity: Emerging

Definition:

AI governance is the process of creating policies, assigning decision rights, and ensuring organizational accountability for risks and investment decisions for the application and use of artificial intelligence techniques. AI governance is part of adaptive data and analytics governance, addressing the predictive and generative nature of AI.

Why This Is Important

With AI now delivering value in the enterprise, data and analytics leaders observe that scaling AI without governance is ineffective and dangerous. Generative AI and applications, like OpenAI's ChatGPT, make AI governance a necessity, as using pretrained AI models billions of times sharpens risk concerns. The leaders want to balance AI's business value and the need for appropriate oversight. AI draws the attention of legislators worldwide, who mandate actions by clarifying AI governance priorities.

Business Impact

AI governance, as part of the organizational governance structure, enacts responsible AI, and provides common implementation and adherence mechanisms across the business ecosystem when it comes to:

- Ethics, fairness, and safety to protect the business and its reputation,
- Trust and transparency to support AI adoption via explainability, bias mitigation, model governance, operationalization, and collaboration norms and capabilities.
- Diversity to ensure the right technology and roles for each AI project.

Drivers

- AI governance is in the peak area of the Hype Cycle. Enterprise practitioners are taking steps toward establishing AI governance. Leading organizations in various industries establish AI governance by addressing standards for AI development and operations, providing best practices, guidelines for model management and monitoring, data labeling and interpretation, explainability, fairness, bias mitigation, security, and legal.

- Regulations around the globe target AI directly and affect AI practices indirectly, making AI governance goals more concrete. The U.S. Blueprint for an AI Bill of Rights provides governance pathways, from principles to practice. The objective of the EU AI Act is to "enhance governance and effective enforcement of existing law on fundamental rights and safety requirements applicable to AI systems." The Algorithmic Impact Assessment is a mandatory risk assessment tool intended to support the Treasury Board of Canada. Singapore's Model AI Governance Framework guides organizations in developing appropriate governance structures and mechanisms.

- Trust and transparency of AI solutions are crucial for AI adoption. The probabilistic and opaque nature of AI is new to audiences familiar with deterministic outcomes. AI governance can minimize misinterpretations of AI results by scrutinizing trust in data sources and the explainability of AI decisions. It provides specific testing and validation guidelines, differentiating "life-critical AI."

- AI governance is necessary to establish AI accountability. It is difficult to achieve because use cases differ in terms of their data, solution and outcome requirements. It outlines reactive responsibilities, actions and procedures in the case of unanticipated and unintended consequences. It ensures that ethics are considered for each use case.

Obstacles

- Often, AI governance is stand-alone from mainstream governance initiatives, which stalls its progress. The best method is to extend existing governance mechanisms to take advantage of recognizable policies and methods, such as in data governance. AI governance benefits from a conversation with the security, legal and customer experience functions.
- Many governance initiatives assume command and control. Instead, adaptive governance supports freedom and creativity in AI teams but also protects the organization from reputational and regulatory risks. Little or no governance in AI teams to facilitate freedom and creativity is an acceptable approach if this is a conscious governance decision.
- AI value assurance and model risk management are new in AI. While methods exist — for example, in the financial industry — they are largely unknown to others, and every governance organization is inventing its own.
- Technologies to support AI governance are fragmented and are often designed for a single industry.

User Recommendations

- Extend to AI your existing governance mechanisms, such as risk management or data and analytics governance.
- Establish and refine processes for handling AI-related business decisions. Blend processes, people and technology to succeed.
- Aim to align your AI governance framework with the laws and regulations in your jurisdiction(s) to directionally assure your efforts amid evolving AI-specific considerations. Gain agreement on AI risk guidelines that are driven by the business risk appetite and regulations.
- Decide on the organizational structure and accountability for propagating responsible AI — for example, what to centralize and what to do locally.
- Implement tools for AI review and validation. For each AI use case, require an independent AI model validator, a data scientist whose job is to assure model explainability and robustness. Have all parties in the process defend their decisions in front of their peers and validators.
- Ensure that humans are in the loop to mitigate AI deficiencies.

Sample Vendors

Arthur; Chatterbox Labs; Credo AI; DarwinAI; FICO; Google; IBM; Prodago; SAS; Weights & Biases

Gartner Recommended Reading

Applying AI — Governance and Risk Management

4 AI Governance Actions to Make a Swift Business Impact

Artificial Intelligence Primer for 2023

Digital Transformation Office

Analysis By: Sarah Davies, Joanne Kopcho

Benefit Rating: Transformational

Market Penetration: 20% to 50% of target audience

Maturity: Early mainstream

Definition:

A digital transformation office (DTO) exists to oversee the execution of enterprisewide transformation initiatives. These offices are similar to enterprise program offices because the breadth of their mandate typically involves a large portion of the enterprise. These offices are created temporarily for the purpose of operating outside of the strategic execution norms in order to deliver transformation.

Why This Is Important

Organizations that create a formal DTO as a dedicated function are more successful in addressing enterprisewide transformation. A DTO ensures the effort is collaborative, adaptive, value-driven, and strategically aligned. It supports both the executive leaders and committed stakeholders with a diverse set of business capabilities and technologies designed to support their specific mandates. Specifically set up for digital transformation, the DTO is often the basis for a more permanent PMO.

Business Impact

Digital transformation initiatives cross many organizational boundaries. Having a central coordinating function is a proven strategic approach for adding discipline and structure to transformation efforts. Organizations that fail to leverage a DTO are less likely to achieve the benefits and outcomes of transformation. Once the transformation is complete, a successful DTO can become the basis for a permanent function that helps to sustain the complex change required by the digital business landscape.

Drivers

- Executive leaders increasingly recognize the benefits of formalizing transformation initiatives to scale and evolve existing business operations with advanced digital or complex systems.
- The legacy practices for governance, financial and management of work are incompatible with the portfolio flexibility required to meet dynamically changing business conditions and operations.
- Emerging technology advancements are driving opportunities to automate and increase productivity, thus creating more ways to deliver value.
- Successful models require human-centric designs that foster collaboration and enable coordination across dispersed teams.
- The amount of organizational and behavior change that digital transformation brings requires change leadership practices to address transformation barriers.

Obstacles

- Existing strategy execution teams provide a level of transparency around the ongoing impacts of change and strategy execution, leading IT and executive leadership to mistakenly believe they are adequately equipped to deliver the full impacts of transformation. This results in a lack of commitment to form a separate DTO and weak transformation leadership.
- Up to 74% of executives believe that they involve employees in large transformational change initiatives, and that their communications provide clarity and a collaborative common understanding about the goals of the transformation. This results in reluctance to invest in a DTO to address concerns they do not see as relevant.
- Digital transformation is often viewed as a top-down initiative, where each stakeholder is accountable for their own deliverables. This siloed approach creates disjointed decision making, resulting in a perceived need for consultancy rather than internal management of the transformation.

User Recommendations

- Begin by developing a transformation program office structure that supports effective leadership for executing program delivery across the enterprise. Set up portfolio function(s) to plan and validate the transformation vision and success criteria.
- Establish governance facilitation that can prioritize work and mitigate impact between transformation and nontransformation portfolios.
- Create transparency as to the progress of the transformation and outcomes through reporting and extensive communication vehicles.
- Implement robust organizational change practices and build continual change capabilities using ESCAPE change leadership practices.

Gartner Recommended Reading

Key Capabilities of a Digital Transformation Program Office

Optimize Outcomes With Program Management Across Product Lines

Master 4 Management Capabilities for Digital Strategy and Execution Success

Hyperautomation in Finance

Analysis By: Mark D. McDonald

Benefit Rating: High

Market Penetration: 5% to 20% of target audience

Maturity: Emerging

Definition:

Business-driven hyperautomation is a disciplined approach that organizations use to rapidly identify, vet and automate as many business and IT processes as possible. Hyperautomation involves the orchestrated use of multiple technologies, tools or platforms (inclusive of, but not limited to, AI, machine learning, event-driven software architecture, RPA, iPaaS, packaged software and other types of decisions, and process and/or task automation tools).

Why This Is Important

Hyperautomation in finance is a step toward autonomous finance that links a series of manual and semiautomated processes into a fully automated workflow. CFOs looking for greater workforce efficiencies use vendors that combine traditional automation solutions, such as business process automation and RPA, with a modern set of automation technologies (like AI and machine learning) to support a modern finance transformation.

Business Impact

Hyperautomation in finance enables organizations to increase productivity by automating workflow execution and decision making. Hyperautomation tools provide integrated solutions to support complex decision processing, improve resilience and efficiency, and add agility to finance processes. They create the opportunity to accelerate processing times, reduce error rates and drive down process costs with the goal of improving productivity and having an immediate business impact.

Drivers

- Finance organizations are maturing their adoption of hyperautomation. In Gartner's 2022 Finance Technology Bullseye Survey, over 56% respondents reported an average of four or more hyperautomation initiatives underway that aim to improve efficiency, speed, agility and employee productivity.
- The hyperautomation market continues to mature. Vendors that originated in RPA, BPA, low-code application platform (LCAP) and iPaaS sectors, as well as startups, technology giants and systems integrators, are procuring, building and enhancing their toolboxes of automation technologies.
- Hyperautomation solution capabilities have evolved due to consolidation among existing players, and acquisitions and entries by larger IT companies. This evolution is extending the capabilities of traditional RPA platforms by including AI and ML.
- By incorporating nonintelligent tools such as LCAPs and intelligent document processing (IDP) solutions and workflows alongside intelligent automation technologies like AI and ML, finance organizations can augment and orchestrate more complex and decision-based tasks across the full range of finance processes.

Obstacles

- Finance often uses a single tool or technology, such as RPA, to achieve its automation goals, which may not be the best way to automate all use cases, especially those that are exception-heavy or judgment-based. This drives decreased optimism about hyperautomation capabilities.
- As AI improves and further emulates human decision making, the temptation to delegate human responsibilities to machines can lead to unintended consequences if processes are not built with transparency and the ability for people to intervene.
- As finance engagement with hyperautomation increases, the need for strong, centralized governance grows to ensure that accountability is assigned correctly and that the focus is on managing rules and processes rather than tasks.
- Hyperautomation capabilities are still evolving. Vendors that started out as RPA and BPA providers are adapting to a hyperautomation landscape, but with different mixes of tools and varying levels of maturity and integration.

User Recommendations

- Take a diversified approach to automation to avoid dependency on a single technology. Build a portfolio of platforms in which each component specializes on the processes and outcomes it supports.
- Avoid automation projects that focus on technology or a specific use case. Instead, identify the capabilities needed from your use cases and look for the most suitable set of technologies to meet the majority of your capability needs.
- Prioritize use cases by assessing the readiness for automation initiatives in order to avoid working on processes that are not ready for automation.
- Develop automation skills, governance and structure within your organization.
- Overcome resistance and skepticism by demonstrating successful prototypes of smaller and simpler projects, before moving on to more complex and impactful efforts.
- Establish a comprehensive set of metrics aligned with business outcomes to measure the success of your automation initiatives.

Sample Vendors

Automation Anywhere; Microsoft; NICE; SS&C Blue Prism; UiPath

Gartner Recommended Reading

Succeed With Hyperautomation by Simplifying Your Start to RPA

2023 Finance Technology Bullseye Report

Market Guide for Intelligent Document Processing Solutions

Sliding into the Trough

Agile Project Management

Analysis By: Robert Handler

Benefit Rating: Transformational

Market Penetration: 5% to 20% of target audience

Maturity: Early mainstream

Definition:

Agile project management is a style of project management designed for continuous, connected activities in environments with high degrees of uncertainty and change. Conventional project management uses on-time and on-budget delivery against an initial plan as a primary determinant of success. Agile project management focuses on constant incremental value delivery through dedicated teams, determining success, as a whole or in part, through customer feedback.

Why This Is Important

Ongoing uncertainty continues driving agile project management beyond application development, and organizations are embracing this shift. Agile project management is better equipped for environments with constant change because it enables change without the penalties in traditional project management where most changes increase scope and costs.

Business Impact

Organizations that lack flexibility to embrace shifts in customer demand will rapidly become out of touch. Adaptive strategy requires adaptive planning. Agile project management enables projects to adapt to constantly changing customer demands without the rigid constraints of detailed plans. The flexibility of agile project management enables an organization to embrace change, own outcomes and accept failure as learning.

Drivers

- COVID-19 forced most organizations to rapidly change their plans, leading many business leaders to publicly proclaim in the media that they were “agile now.”

- While a pivot in response to external changes isn't necessarily agile, many business leaders have publicly claimed that they have begun to take action to become agile.
- Supply chain and global economic challenges appear to be cementing the need for agile project management within and outside of the IT and digital industries.
- Risk management with digital business is more complex than ever before. Smaller, less risky agile projects are seen as an acceptable alternative to large, expensive, strategic projects.

Obstacles

- Adopting agile project management is not easy. It requires a change in mindset, leadership support, significant training, organization change management and dedicated resources, often as multidisciplinary (fusion) teams.
- Once leaders engrain the commitment required to embrace agile for projects, they may retreat or stall — often because of change resistance from those committed to existing ways of doing things.
- Some types of projects simply don't lend themselves to agile, so there may be justified resistance in certain areas, or possibly false starts. Traditional project management still has, and likely will always, have a place for many types of projects.

User Recommendations

- Educate executive leadership and secure their support for new ways of working by highlighting benefits and addressing concerns.
- Identify high change business areas that would benefit from agile project management. Enable early success by providing training, coaching and ideally experienced resources. Modify internal processes to allow reprioritization of work based on shifting market needs, instead of following rigid plans, by providing appropriate principles and guidance.
- Evolve project dashboard metrics for agile project management which favor business outcomes and customer satisfaction over on-time or on-budget expectations. Leverage early successes to propagate best practices to areas that can benefit from agile project management.

- Start small and experiment often to introduce more agile ways of working into your project management playbook. Enable scaling with crosscutting functions in an effort to standardize ways of working to allow synchronization of interdependent work efforts.

Gartner Recommended Reading

Magic Quadrant for Adaptive Project Management and Reporting

Enabling Value Delivery in an Agile World

Overview of Agile Development Methodology

Cloud ERP for Global Enterprises

Analysis By: Dixie John

Benefit Rating: High

Market Penetration: 5% to 20% of target audience

Maturity: Adolescent

Definition:

Cloud ERP for global enterprises is defined as the adoption of SaaS ERP suites by companies that operate across multiple regions with annual revenue above $5 billion. These companies usually search for an ERP suite to operate globally with little latency and provide localization features. The solution must also offer access to a flexible application platform that will enable last-mile extensions to cover different geographical and local business execution priorities.

Why This Is Important

Interest in cloud ERP for global enterprises varies across different business domains. For example, most organizations are highly interested in cloud human capital management (HCM) adoption, while only a few are pursuing cloud ERP adoption for complex manufacturing or more individualized environments. Cloud ERP still represents an opportunity to adopt modern technology with lower initial investments. It persists as a component of strategic assessments as aging legacy applications reach their end of life.

Business Impact

As enterprises commit to a global culture of change, some capabilities in their portfolio shift to standard, enabling the creation of a leaner core ERP. There is a paradigm shift between vendor and customer, where in exchange for rents of the software, the customers get a continuous stream of improvements and ability to gain value quicker from innovation. Vendors have increased investment in AI, machine learning, UX customization and regional data center expansion to support global enterprises.

Drivers

- Lower cost of implementation, faster time to benefit, technological and business scalability, reduced cost of upgrades and lower capital expenditure, when best practices are followed.
- Global enterprises that are able to adopt cloud ERP through a standard set of application capabilities may benefit from quicker global rollout (compared with the traditional on-premises model) and advantages that come with advancement in localization offerings.
- Enterprises seeking to enable a tiered ERP approach may find that cloud ERP is an option that will minimize the need to set up a fully fledged support team for different applications. This will reduce the overall complexity and costs of application and infrastructure management.
- The standardized nature of the cloud approach provides a fit-to-standard approach in particular for system-of-record capabilities.
- Given the divergence of use cases for cloud and on-premises solutions (for example, SaaS for finance, with on-premises for manufacturing), cloud ERP solutions are considered to deliver a two-tier ERP strategy.
- If proper adjustments are made to the governance, support, business integration model and application platform integration (aPaaS), enterprises may benefit from the continuous improvement of the cloud ERP-scoped capabilities as a basis to deliver other unique solutions.

Obstacles

- Global enterprises need to build adequate support models for the adoption of new ERP features while enforcing global standards. This usually requires more sophisticated governance and additional investments in highly skilled personnel, automated testing and/or engagement with application managed services.
- Government policies and regulatory compliances create additional constraints on data residency, protection and sovereignty status where ERP vendors do not have access or qualify to operate. Additionally, mature localized cloud ERP offerings are not available in all countries, which leads to a slower adoption rate in certain regions.
- Lack of dependable telecom infrastructure is still a strong inhibitor in certain geographies.
- Many customers are still averse to lack of control over forced maintenance and updates from cloud ERP providers, which may arise during critical business moments.

User Recommendations

- Evaluate the adoption of cloud ERP as a strategic move to enable innovation and modernization of business operations, rather than upgrading or replacing legacy systems. For instance, deliver via cloud ERP a central supply chain control tower connected to legacy manufacturing instances.
- Examine potential issues that may arise from technological and legal constraints in certain regions (including internet access and reliability, and rules about data residency). Evaluate the architectural capabilities to overcome those challenges.
- When selecting global ERP, ensure the vendor is responsible for keeping the ERP compliant with local regulations as part of the release management procedures. Plan for the fact that ERP vendors do not guarantee the fulfillment of future release roadmaps.
- Evaluate whether a two-tier ERP strategy is the best fit to promote regional or particular business operation coverage, as opposed to a single solution that may be too complex to deploy globally.

Sample Vendors

Infor; Microsoft; Oracle; SAP; Workday

Gartner Recommended Reading

Two-Tier ERP: A Useful, Composable ERP Strategy for Complex Organizations

2022 Strategic Roadmap for ERP

6 Steps to Choose the Best-Fit Cloud ERP Solution for Your Organization

Magic Quadrant for Cloud ERP for Product-Centric Enterprises

Magic Quadrant for Cloud ERP for Service-Centric Enterprises

Cloud MDM

Analysis By: Sally Parker, Helen Grimster

Benefit Rating: High

Market Penetration: 20% to 50% of target audience

Maturity: Early mainstream

Definition:

Cloud master data management (MDM) solutions ensure the uniformity, accuracy, stewardship, governance, semantic consistency and accountability of the enterprise's official shared master data assets. Available in the cloud across a spectrum of resource delivery models, these range from single-tenant shared nothing (IaaS) to multitenant shared something (PaaS) to multitenant shared everything (SaaS).

Why This Is Important

Trusted master data is a foundational requirement of digital business. As organizations' applications have transitioned to the cloud as part of their digital transformation programs, so too has their associated data. This has subsequently shifted the center of gravity in favor of cloud-based MDM solutions.

Business Impact

The MDM market was relatively late in transitioning from on-premises to cloud-based solutions. Cloud-based MDM solutions have lowered the barrier to entry for MDM with the provision of access to subscription-based licensing models, deployment flexibility and improved time to value. They have effectively enabled support for the MDM best practice of "think big, start small, deliver incremental business value." As the center of gravity shifts to the cloud, it opens up greater opportunities for data sharing and syndication ecosystems.

Drivers

- **Stated vendor direction is cloud:** Vendors will ultimately pull the market to the cloud with product roadmap priorities supporting cloud-based platforms to streamline their own product management overheads.
- **Gravitational pull of their application and data ecosystems:** MDM creates a single source of truth for master data across the enterprise's heterogeneous application landscape. As the center of gravity for these applications and their data shifts to the cloud, MDM logically follows.
- **Acceptance of cloud for master data:** MDM has been slow to follow the broader software solutions market in transitioning to cloud deployment models. Vendors that previously delayed offering cloud-based solutions are responding to demand from end-user organizations now ready to embrace cloud for their most critical data — their master data.
- **Lower barrier to entry:** Cloud has lowered the barrier to entry for MDM programs, permitting expansion into a previously untapped and broader client base. SaaS also reduces some MDM skills pain points.
- **Increased availability of cloud-based offerings:** Few MDM vendors were cloud native from the outset. Through the end of 2022, MDM software solution vendors continued and completed their transitions to subscription and cloud-based solutions.
- **Scalability:** To handle compute intensive requirements such as ML/AI for matching.
- **Delivery of incremental business value:** Facilitates the best practice of a more granular and business outcome drive approach to MDM.

Obstacles

- **Migration complexity:** Not all MDM solutions are cloud-native. Some solutions rearchitected for cloud may lack functional parity in the near term as the products mature and may require a lift-and-shift migration from on-premises to cloud requiring external support services.
- **Installed base:** Although vendors are motivated to transition existing clients to cloud, clients will do this at their own pace and over time — in the absence of a hard trigger.
- **Governance:** As master data is heavily shared, a need for real-time integration into associated data sources and processes arises. Organizations in transition to cloud must optimize the business processes and more complex governance of a hybrid ecosystem.
- **Complexity of navigating the vendor landscape:** SaaS alleviates some MDM skills challenges. PaaS/IaaS offer greater configuration flexibility. Licensing constructs vary with MDM spend for some counting toward clients' cloud provider committed annual spend.
- **Best practices persist:** Cloud does not alleviate the business challenges related to being successful with MDM.

User Recommendations

- Take a "*think big, start small, deliver incremental value*" approach to MDM by leveraging cloud as the enabler for business value.
- Conduct a thorough review of current governance practices as a precursor to cloud readiness. Governance complexity increases in a hybrid ecosystem.
- Map and actively track the center of data gravity within your organization for each master data domain to identify and plan for prospective transition points for the cloud.
- Review and document integration complexity to provide a manageable integration scenario that does not negate any benefits of cloud-based MDM.
- Evaluate gaps in capability between candidate vendors' cloud-based and on-premises MDM solutions to determine when and whether a migration between the cloud and on-premises environments is viable.
- Cost should not be the driver for adoption of cloud MDM. Without appropriate capacity planning and cost modeling, cloud services may prove more expensive on a total cost of ownership (TCO) basis. Due diligence is required around capacity planning and TCO modeling.

Sample Vendors

Ataccama; CluedIn; Informatica; Profisee; Reltio; Semarchy

Gartner Recommended Reading

3 Essentials for Starting and Supporting Master Data Management

Create a Master Data Roadmap With Gartner's MDM Maturity Model

Data and Analytics Essentials: Master Data Management — Presentation Materials

Digital F&A BPO

Analysis By: Jan Ambergen

Benefit Rating: Transformational

Market Penetration: 20% to 50% of target audience

Maturity: Adolescent

Definition:

Finance and accounting (F&A) business process outsourcing (BPO) is the use of digital F&A solutions and managed services supplied by a third-party service provider. F&A BPO services provide transformation expertise and technology solutions that meet finance departments' requirement to move from labor-intensive service delivery models to automation-intensive models, with hyperautomation supporting the digital transformation of finance operations.

Why This Is Important

Through the use of hyperautomation, F&A BPO providers are evolving to help organizations mature their finance operations beyond cost arbitrage opportunities. F&A BPO capabilities can address finance's urgency to improve standardization of processes and digitize operations. F&A BPO enables intelligent automated workflows and touchless transaction processing, allowing partnership with clients to focus on generating business intelligence with data and analytics solutions.

Business Impact

The current state of F&A BPO is as follows:

- Vendors have developed offerings capable of introducing intelligent workflows and advanced analytics that apply across end-to-end processes.
- Providers orchestrate digital finance solutions within existing offerings and differentiate themselves through innovation management and technical acumen.
- Embedding hyperautomation in the BPO offerings transforms F&A activities into a highly automated and touchless environment where the human effort is focused on process improvements and exception handling.

Drivers

- Buyers' singular focus has moved from access to labor arbitrage and low-cost delivery locations for quick, cost-saving gains, to improving finance service experience and addressing process inefficiencies. Providers hire IT professionals to develop and apply new technologies (such as AI/ML) and hire industry process experts to enhance customer experience.
- Providers' intelligent workflow automation solutions, powered by AI, are motivating buyers to outsource end-to-end finance processes. These solutions help access data insights to improve financial indicators such as days sales outstanding, days inventory outstanding and days payable outstanding.
- The market is shifting from a contract fee model to a business-outcome-based pricing model. Providers focus on improving the maturity of finance operations through digital solutions.

Obstacles

- Buyers of F&A BPO services that involve the use of partnered technology solutions may show uncertainty over software licensing rights due to internal cultural/stakeholder pressures to retain control and ownership of applications.
- The lack of alignment on process knowledge and governance with the BPO provider risks an overemphasis toward contract compliance and misses the opportunity to create an effective journey to higher maturity levels of the finance organization.
- Pricing models that lack outcome-based payment mechanisms result in difficulties calculating the value of the partnership and lead to nonrenewal of contract.

User Recommendations

- Focus contract fees on the added value of the services provided. Buyers are requesting greater clarity about commercial pricing. A successful outcome-based pricing model relies on a structured outsourcing relationship with governance practices and an ongoing commitment to transparency in fee structures.
- Evaluate vendors' ability to conduct comprehensive process maturity assessments. Buyers should evaluate vendors' ability to analyze their processes for current maturity and to create a transformation roadmap and to assess the potential for improvements. Providers in this market have invested in these process discovery capabilities, and they are widely available.
- When buying, prioritize digital solutions that offer analytic dashboard capabilities integrated with end-to-end process workflow solutions. These solutions enable buyers to request customized views like real-time process workflow performance.

Sample Vendors

Accenture; Datamatics; HCLTech; IBM; Infosys

Gartner Recommended Reading

Critical Capabilities for Finance and Accounting Business Process Outsourcing

Magic Quadrant for Finance and Accounting Business Process Outsourcing

Outcome-Based Pricing Models for New Digital Finance Outsourcing Contracts

Predicts 2023: Outsource Finance Operations and Seize the Opportunity to Digitally Transform

Infographic: Accelerate Finance Transformations With Digital Finance Outsourcing

Climbing the Slope

Materiality Thresholds in the Close Process

Analysis By: Renata Viana

Benefit Rating: Moderate

Market Penetration: 20% to 50% of target audience

Maturity: Early mainstream

Definition:

Materiality threshold is the monetary value limit established by corporate controllers to reduce the amount of manual journals and/or reconciliations, which consequently reduces the effort in the close process by eliminating nonessential work. Implementing materiality thresholds can strategically reduce the finance team's workload, decreasing the amount of transactions that accounting staff have to prepare and review without sacrificing the quality of financial reports.

Why This Is Important

Materiality threshold promotes agility during the month-end close process by eliminating immaterial reconciliations and manual journals booked to the financials. Manual journal entries are a major pain point for finance leaders, taking staff time away from more value-added activities. Materiality threshold is company-specific and varies by factors such as organizational size, revenue, type of business and location. It can also be flexible enough to comply with auditors' requirements.

Business Impact

Materiality threshold is critical to scaling financial close and consolidation processes. This approach reduces bottlenecks during the course of the month-end without sacrificing the quality of financial reports. The thresholds established for management accounting purposes will not be the same as the materiality threshold in audits, where a low percentage of the revenue is generally used to guide the overall materiality. Instead, it is a company-specific limit to book and reconcile transactions.

Drivers

- Increased demand for agility and control, especially with modern ways of working, such as autonomous accounting

- Need for metrics and governance during the month-end process, which demands a high level of governance, especially in large intercompany accounts
- Requirements for boosting adoption of group measurements where companies operating in the same group will be aligned automatically to the materiality established by the parent company
- Intensified demand for enhanced analytics with high level of standardization not being polluted by immaterial transactions booked to the financials
- High pressure for improvements not only for manual journal entries but also for accruals, balance sheet flux analysis, balance sheet reconciliations, intercompany reconciliation and reclassifications, aligned with low cost and easy implementation
- Demand from accounting staff for development and new ways of working can boost management decisions toward more added-value tasks, avoiding wastage on analysis of immaterial transactions

Obstacles

- Companies with multiple segments and different sizes may struggle to set up materiality thresholds in the close at the first moment.
- The accounting staff may resist a more meaningful way of working simply because this changes the traditional working style; staff can feel uncomfortable letting some small and non-added-value tasks go.
- Limited skill sets from the accounting team can also be a significant block; staff may be afraid of using new technologies.
- Decentralized intercompany management, especially in a large group, can impact the implementation of the thresholds.

User Recommendations

- Reduce bottlenecks during the close by applying materiality thresholds — which are not the same as materiality thresholds in audits, and should not impact the quality of financial reports.
- Select optimal materiality thresholds that will eliminate sufficient work from the close without compromising its accuracy.

- Test the materiality thresholds and monitor the benefits after a month or so of implementing them to make sure levels are set accordingly.
- Set and communicate the materiality policy to accounting staff from different regions and segments to streamline intercompany.
- Periodically revisit the materiality policy and gather feedback from senior leaders to ensure alignment with business objectives.

Gartner Recommended Reading

Save Time Through Materiality-Based Manual Journal Entry Elimination

Ignition Guide to Setting Materiality Thresholds in the Close Process

Infographic: Benchmarking the Use of Materiality Thresholds in the Close

Cloud ERP for Public Sector

Analysis By: Denis Torii

Benefit Rating: Transformational

Market Penetration: 1% to 5% of target audience

Maturity: Early mainstream

Definition:

Cloud ERP for the public sector is typically limited to administrative ERP, which includes human capital management, financials, grants management and procurement. In addition to these horizontal functions, some of these solutions provide support to niche requirements, such as public-sector accounting frameworks, funds or contract management.

Why This Is Important

Digital government enablement is a target of many public-sector entities. Consequently, there is increased pressure to modernize ERP systems, which are foundational to the delivery of government services. In addition, outdated and end-of-life legacy applications are forcing ERP strategy reviews. Cloud ERP for the public sector has moved beyond the Trough into mainstream adoption, as vendors have improved functional scope and addressed previous inhibitors, such as data residency and security.

Business Impact

Cloud ERP may lead to economies of scale and continuous improvement enablement to which public-sector entities aspire. This frees up valuable IT resources for public-sector entities to focus on their core missions and differentiating capabilities, rather than worrying about how to upscale resources to support systems of record. By reducing reliance on customizations, organizations can enable a more-flexible and composable ERP strategy to accommodate diverse and evolving citizen needs.

Drivers

- Cloud ERP vendors are delivering functionality and preconfigured analytics reporting that is adequate for most public-sector entities. The functional scope and sophistication have improved to support all but the most complex entities (e.g., defense and intelligence).
- Assuming organizational readiness is in place, cloud ERP can bring lower cost of implementation, faster time to benefit, reduced cost of upgrades and lower capital expenditures (capex), compared with implementing a new on-premises ERP.
- Vendors are developing and improving machine learning (ML)/artificial intelligence (AI) in their own cloud ERP applications. These advanced technologies are beginning to be used to drive greater process efficiency and effectiveness, reshaping how users interact with complex applications, such as ERP.
- Recovery and stimulus funding is accelerating IT modernization globally, triggering new investments in cloud government applications, ERP being foundational to digital services delivery.
- Some of the cloud adoption is being driven by vendors eliminating on-premises support in the near term and/or no longer offering an on-premises option to net new customers.
- Platform-as-a-service (PaaS), which is growing in maturity and familiarity among application teams, is becoming an enabler of cloud ERP adoption.

Obstacles

- Public-sector adoption of cloud ERP suites has increased significantly, but trails private sector organizations, due to policy constraints, funding models and procurement methodologies.
- To fully realize the advantages of cloud ERP, organizations must embrace a culture of change and flexibility, which is not a fundamental strength of most public-sector entities.
- Apart from change resistance, specific regulations may drive customization that is too specific to be available across packaged solutions for certain organizations.
- Lack of a robust, composable ERP strategy might inhibit the adoption of specialist applications, leading to “silos” of applications and data.
- Although increased value may be achieved, there is no clear indication that the long-term TCO is lower, compared with on-premises deployments.
- Tighter data privacy and residency regulations by country, region or entity type may hamper public-sector entities to consider some of the available offerings.

User Recommendations

- Evaluate cloud ERP offerings as part of your ERP strategy. Focus on administrative back-office capabilities, which tend to have the greatest return on investment (ROI).
- Ensure a good functional fit and build an internal roadmap to adopt new features as the vendor rolls them out. Consider the fact that cloud ERP generally has a different update/upgrade cycle than that of the traditional on-premises ERP, and adjust your governance and planning processes accordingly.
- Be aware that the scope of a public offering may vary by geography (e.g., the government cloud in the U.S. and the European Union Cloud Initiative). Many vendors have a prime geography that they target first. Then, they look at localizing through a private cloud offering. Confirm that the offering meets your regulatory and compliance needs.
- Address the internal skills needed to move from your legacy systems to the cloud. Plan for skills changes in IT, as well as functional areas, such as procurement and finance.

Sample Vendors

CGI; Civica; OpenGov; Oracle; Sage Intacct; SAP; TechOne; Tyler Technologies; Unit4; Workday

Gartner Recommended Reading

Critical Stakeholder Engagement Actions for Successful Public-Sector ERP Programs

Market Guide for Government ERP Solutions

What Should I Consider to Modernize My Public Sector ERP Strategy?

Select Applications That Further Your Digital Government Technology Platform Goals

Self-Service Analytics

Analysis By: David Pidsley, Alys Woodward, Peter Krensky, Sharat Menon, Anirudh Ganeshan, Edgar Macari

Benefit Rating: Moderate

Market Penetration: 20% to 50% of target audience

Maturity: Mature mainstream

Definition:

Self-service analytics (SSA) refers to technology and processes in which line-of-business professionals are enabled to autonomously prepare and visualize data, perform queries, and generate reports, with nominal IT support or involvement. SSA is often characterized by low-code/no-code tools that are increasingly augmented via AI. These tools provide increasingly sophisticated data preparation and analytics capabilities, but are simplified for ease of understanding and frictionless data access.

Why This Is Important

Self-service analytics fosters agility by enfranchising business analysts. It gives analysts direct access to data, enabling them to blend data, derive insights and collaborate on data visualizations. This approach reduces IT bottlenecks, accelerates decision making and enhances efficiency. While SSA is useful for rapid prototyping, complex scenarios may still necessitate IT support and analytics developer intervention for data integration, cataloging, pixel-perfect reporting or advanced analytics.

Business Impact

Self-service analytics is critical to scaling the benefits of data-driven decision making. Many centralized D&A functions struggle to keep up with requests for data and insights coming from decentralized teams. Emerging business technologists or citizen data scientist personas who understand the business context of the data are able to use powerful no-code/low-code data preparation and analytics platforms to quickly discover insights.

Drivers

- **Enhanced vendor offerings:** Analytics and business intelligence (ABI) platforms and vendors in adjacent markets continue to improve SSA capabilities, ensuring alignment with the abilities of less technical users, such as business analysts.
- **Evolving business-user needs:** As business users' information requirements advance, they expect SSA to extend into data management. Tasks such as adding data sources, selecting from data catalogs and integrating external data sources are anticipated capabilities for advanced business analysts (power users or citizen developers).
- **Decentralized budgets and spending patterns:** Compared with central IT teams, lines of business allocate a larger proportion of their overall IT budgets to D&A, emphasizing the need for self-service solutions that cater to their specific requirements.
- **Demand for timely insights:** Business users require prompt insights, but centralized teams may struggle to provide the necessary support. This support gap drives users to seek modern BI tools enabling SSA.
- **Decision-making empowerment:** SSA allows business users to access critical information and make data-driven decisions faster, uncovering valuable insights that might have been overlooked by centralized teams.
- **Analytics collaboration:** Organizations are increasingly seeking to provide environments where a diverse range of users can simultaneously co-produce analytics projects. This collaboration enables users to share knowledge, streamline workflows and drive collective decision making, further boosting the adoption of SSA.
- **Metrics stores and governance:** A virtualized layer that allows users to define and manage metrics as code supports governing metrics from data warehouses and servicing all downstream SSA, data science and business applications.
- **Generative AI:** ABI platforms are increasingly integrating large language models like GPT, which can be leveraged in data preparation, code generation, debugging, and creation of data stories and visualizations. Generative AI accelerates SSA, allowing newer users to enter this workflow. However, intelligent prescriptive applications lessen the need for visual SSA.

Obstacles

- **Governance challenges:** Inadequate user enablement and training often lead to overwhelming governance issues, hindering self-service tools' effectiveness.
- **Struggles between agility and control:** Organizations grapple with striking the right balance, risking either stifled innovation or jeopardized data integrity.
- **Intense data engineering collaboration:** The increased need for data engineering involvement creates collaboration requirements, potentially disrupting workflows and causing metric inconsistencies.
- **Cumbersome DataOps practices:** DataOps introduces complex processes that challenge organizations to adapt effectively, making analytics collaboration more difficult for business analysts.
- **Persistent data quality issues:** Organizations continue to battle poor data quality, risking misunderstandings and detrimental misuse of data.
- **Overhyped vendor claims:** Many exaggerated claims have yet to be fully realized in products, necessitating advancements in augmented analytics and data literacy programs.

User Recommendations

- Segment your users by their ability and inclination to become self-servicing, and deliver to the most prepared users first. Build data literacy and certification programs to ensure users are best prepared to add value from self-service without mistakenly delivering bad or siloed information. Success often compounds and drives further successes, and aids in improving D&A maturity over time.
- Evaluate analytics catalogs and SSA capabilities to allow business users to add curated or external sources to their data landscapes.
- Form communities (analytics franchises) consisting of both business analysts doing self-service and augmented consumers. Self-service should not be self-serving. Communities where sharing, collaboration, education, project overviews and success evangelism occur are critical as analytics audiences grow.

Sample Vendors

Domo; Microsoft; Oracle; Pyramid Analytics; Salesforce (Tableau); TIBCO Software

Gartner Recommended Reading

Critical Capabilities for Analytics and Business Intelligence Platforms

Toolkit: Create a RACI Matrix for Self-Service Analytics

Infographic: Self-Service Analytics and BI Adoption Roadmap

How to Balance Control and Agility in Your Self-Service Analytics

Rethink Self-Service by Establishing Analytics Franchises to Drive Adoption and Break Bottlenecks

Financial Close and Consolidation Solutions

Analysis By: Permjeet Gale

Benefit Rating: Moderate

Market Penetration: 20% to 50% of target audience

Maturity: Early mainstream

Definition:

Financial close and consolidation solutions are cloud-based applications that enable corporate controllers and their teams to manage the organization's group close, consolidation and reporting processes. These tools manage and drive financial control across the close cycle, execute financial consolidation across multiple legal entities, and adhere to accounting standards, Generally Accepted Accounting Principles (GAAP), International Financial Reporting Standards (IFRS) and regional compliance.

Why This Is Important

Controllers require solutions that can streamline and standardize through group consolidation and reporting to be able to deliver effectively. This creates a value-add proposition within controllership function while simultaneously maintaining, if not lowering, their cost base. This solution is a key tool on the journey to autonomous finance.

Business Impact

These solutions provide large and extra-large organizations a mechanism to bring together diverse finance systems, across multiple legal entities, into a streamlined and unified environment. Enabling organizations to standardize their close process both regionally and globally, removing the impact of using varied ERPs. Integrated regulatory compliance provides further assistance in a complex environment that continues to alter and grow.

Drivers

- Reporting requirements for both regulation and compliance are increasing and changing regularly. This places additional pressure on Controllers to report accurately and timely, both within and across multiple geographies.
- Whether through organic growth or mergers and acquisitions, organizations are becoming more complex in their structure. Many organizations have multiple charts of accounts and different ERPs within their group. This can add delays into the group close cycle and reconciliation process, as there are often no standardized processes nor a holistic view to monitor and manage the process.
- There is a greater pressure on controllers to find efficiencies within their team, with a large focus on digital transformation. These challenges range from reducing the overall cost base, creating time for greater value-added tasks, or meeting deadlines faster. This is in tandem with a greater number of requirements being placed on controllers and their teams, from both internal and external stakeholders.
- An increasingly hybrid workforce has created a need for solutions that can be accessed easier from different locations. Previous close and consolidation tools were based on-premises, creating an issue when staff locations diversified.

Obstacles

- The environment in which these solutions serve is continually changing, with regulation being added or amended. Aligning a solution to meet the different accounting standards in different countries is complicated.
- The challenges within organizations in the group close and consolidation function are not identical. Solutions have focus areas on specific challenges, which can make assessing and selection harder for end users. It will also take time for all solutions to align meeting core challenges.

User Recommendations

Corporate controllers will need to assess the maturity and the differentiated offerings of these solutions to find one that is best fit to the organization's needs, ensuring the value proposition is met.

- Identify which aspects of the group close and consolidation process need more attention and if there is a greater need for a particular capability, creating a priority listing. These will need to be triaged into whether these are a process change or a technological solution.
- Focus on higher priority capabilities within the solution based on the organization's need. For instance, requirements for regulatory reporting in multiple standards or the need for a reconciliation tool to assist with the internal close cycle.
- Assess the current finance technology environment. What solution will complement and streamline into the existing environment. Consider data integration requirements.

Gartner Recommended Reading

Characteristics of Companies With a Fast Accounting Close

Close Process Time Analysis Tool

Modern Chart of Accounts

Analysis By: Miles Onafowora

Benefit Rating: Moderate

Market Penetration: 20% to 50% of target audience

Maturity: Early mainstream

Definition:

A modern chart of accounts (CoAs) should be scalable, easy to use and properly governed. Modernizing CoA is an important step to maximize financial software efficiency and a critically important driver in financial reporting quality. Efforts to redesign and modernize the CoA allows newer technology capabilities to provide operational insight.

Why This Is Important

Charts of accounts have evolved into more than a framework of account numbers used to create financial statements. Modernized CoAs improve financial data lineage and align finance transactional activity with current business and operating models. They are critical to maintaining the structural integrity of business operations, supporting finance initiatives such as minimizing the amount of effort required for the financial close process and improving report efficiency.

Business Impact

While the controllership arm of any organization typically owns the chart of accounts, many other areas will be influenced by its modernization, including:

- Controllership — The days required to close the books can be improved by standardizing key organization structural segments, and the governance of those segments and their attributes.
- Business units — Modern CoAs are responsible for structuring business unit activity captured by process areas throughout the organization.
- Processes (e.g., AP, Billing, AR) — Changes to segments or CoA structure could mean changes to workflows and process).

Drivers

- Finance transformation projects, such as ERP implementations, help controllers understand how emerging technologies can enhance their future state. A modern CoA should be scalable and easy for others within the organization to use and understand.
- The close and consolidation process remains a focus area for improvement in most organizations. According to the 2023 Gartner Finance Executive Priorities Survey, 75% of controllers have flagged streamlining and digitizing the close process as a top priority for 2023. Along with these initiatives lay opportunities to fix structural wear and tear of your organization's CoA.
- Emerging technologies supporting multidimensional insight into organization activities reduce the level of transactional attributes associated with the chart of accounts. Group-level reporting or roll-up capabilities, for example, have a significant influence on the choice between a ledger structure that only supports financial reporting needs or one that supports management operating needs as well.
- CoA governance that clearly defines principles such as roles and responsibilities for change requests to CoA segments or their attributes may prompt a more modern approach. Such an approach is also indicated when these principles become unmoored as a result of M&A or decentralized business unit processes over time.

Obstacles

- A lack of trust that modernizing will yield significant improvement to processes only creates more work.
- Modifications to your CoA hierarchical structure must be analyzed at the most granular level possible to better understand opportunities to improve transactional lineage. In complex financial ecosystems, substantial effort is required to understand and improve transactional lineage as well as separate financial and nonfinancial relationships and dependencies.
- A misunderstanding of the level of effort required to support the redesign project may lead to missed expectations. Historically, controllers have focused on basic activities such as retirement of unused accounts or updating the necessary mapping required to produce consolidated financial statements. With a modernized CoA those activities become a part of your CoA governance. Your modernization project is a deeper dive into tangible improvements to both upstream (how transactions are recorded) as well as downstream (external and internal reports) structure.

User Recommendations

- Create and follow a modernization plan by coordinating the working sessions with key partners. A level of due diligence should be done to identify and communicate your goals and objectives.
- Balance specificity with scalability by thinking about your long-term reporting strategy in parallel with improvements to current reporting insight. Your code block segments should be specific but also flexible enough to absorb M&A and organizational groups.
- Avoid overreliance on one solution by welcoming new technology capabilities. Previous segments in your code block become reference fields or extended fields existing in a data warehouse that was not previously available.
- Develop strong principles to guide collaboration by creating strong governance policies that will ensure the future health of your CoA and identifying policy and workflow changes. Socialize a maintenance schedule that includes notification of potential changes to segments or their attributes. Establishing a CoA review cadence with key business partners promotes a continued trust in the health of your CoA.

Gartner Recommended Reading

How to Prepare for Chart of Accounts Modernization

Designing, Managing and Governing an Effective Chart of Accounts

Master Data Management

Analysis By: Sally Parker

Benefit Rating: High

Market Penetration: More than 50% of target audience

Maturity: Mature mainstream

Definition:

Master data management (MDM) is a technology-enabled business discipline in which business and IT work together to ensure the uniformity, accuracy, stewardship, governance, semantic consistency and accountability of the enterprise's official shared master data assets. Master data is the least number of consistent and uniform sets of identifiers and extended attributes that describe the core entities of an enterprise.

Why This Is Important

MDM is a cross-organizational collaborative effort that focuses on the consistency, quality and ongoing stewardship of master data. Master data is the subset of data that describes the core entities an organization requires to function — customers, citizens, products, suppliers, assets and sites. Master data sits at the heart of the most important business decisions, driving a need for a consistent view across business silos.

Business Impact

MDM initiatives are progressing as a foundational component of digital transformation. Leading organizations draw a causal link between their master data (parties, things and places) and the business outcomes it supports, including customer retention, supply chain optimization, and risk and regulatory compliance.

Interest in MDM extends to a broad range of vested-interest stakeholders, including finance, marketing and supply chain. MDM is now mainstream. Organizations seeking a single view of their master data recognize it as a necessity.

Drivers

- MDM is not a new concept, but adoption varies across geographic regions, with North America the most mature region, followed by Western Europe. The rest of the world is earlier in the maturity cycle and representative of markets primed for growth.
- Business process integrity eludes organizations with complex or heterogeneous application and data landscapes. Such organizations can suffer from inconsistent master data and/or a lack of trust in their master data. Organizations are increasingly recognizing the direct and causal link between this data and business outcomes, which MDM is designed to address.
- Rapidly evolving business needs, particularly in uncertain times, translate into greater demand for the benefits afforded by MDM — notability agility. The COVID-19 pandemic, which initially stalled projects, ultimately served to fast-track a broader realization of the causal link between trusted and connected master data and business resilience.
- Interest levels are increasing across a broader range of stakeholders (beyond technology), in both private and public sectors.
- A prior hesitance to embark upon MDM initiatives, due to complexity and cost, is easing.
- The barrier to entry has dropped significantly over the past two years with the broader availability of cloud-based and subscription-based MDM vendor offerings, which are now the most dominant offerings for net new clients. This lowering of the barrier to entry renders MDM viable for a broader target audience that comprises small and midsize organizations.
- A shift in mindset toward a more granular and business-outcome-led MDM program is reflected in the MDM vendors' "land and expand" strategies, where clients start small and progress toward incremental mastery of use cases and domains.
- Digital transformation requirements are forcing organizations to either start or modernize their MDM programs to leverage more recent cloud-based offerings and new augmented MDM capabilities.

Obstacles

- **Lack of consistent vendor presence:** Coverage is weaker outside North America and Europe.
- **Technology blinkers:** The prevailing pitfall remains the instinct to treat MDM as a technology initiative in isolation. Technology alone won't solve a challenge that traverses people, processes and technology.
- **Human factors:** Organizations that fail to proactively engage business stakeholders in scoping struggle to meet expectations of value and to establish an operational governance structure in service of MDM.
- **Goals:** MDM is still too often seen as an IT project. When MDM is a data or IT project that doesn't align to business outcomes, it fails.
- **Perceived complexity:** The MDM solutions market only recently shifted toward subscription pricing, cloud-based offerings and simpler products, which contribute to more approachable solutions and shorter deployment times.
- **Skills:** Successful MDM implementations require business acumen, technology and governance capabilities. Finding the right balance and availability of these skill sets remains problematic and is driving a need for third-party services as the norm.

User Recommendations

- Use business outcomes to identify the least amount of data with the greatest business impact.
- Approach MDM as a technology-enabled business-led initiative.
- Secure executive sponsorship to facilitate cross-organizational collaboration.
- Ensure that the causal link between the MDM initiative and the business outcomes it supports is clearly understood and articulated.
- Keep your master data attributes lean and focused.
- Leverage third-party services to fast-track time to value. The majority of organizations leverage external support with their MDM strategy and/or implementation. Third parties offering industry expertise and accelerators can greatly impact time to value.

Gartner Recommended Reading

3 Essentials for Starting and Supporting Master Data Management

Create a Master Data Roadmap With Gartner's MDM Maturity Model

Data and Analytics Essentials: Master Data Management — Presentation Materials

Appendixes

Hype Cycle Phases, Benefit Ratings and Maturity Levels

Table 2: Hype Cycle Phases

(Enlarged table in Appendix)

Phase	Definition
Innovation Trigger	A breakthrough, public demonstration, product launch or other event generates significant media and industry interest.
Peak of Inflated Expectations	During this phase of overenthusiasm and unrealistic projections, a flurry of well-publicized activity by technology leaders results in some successes, but more failures, as the innovation is pushed to its limits. The only enterprises making money are conference organizers and content publishers.
Trough of Disillusionment	Because the innovation does not live up to its overinflated expectations, it rapidly becomes unfashionable. Media interest wanes, except for a few cautionary tales.
Slope of Enlightenment	Focused experimentation and solid hard work by an increasingly diverse range of organizations lead to a true understanding of the innovation's applicability, risks and benefits. Commercial off-the-shelf methodologies and tools ease the development process.
Plateau of Productivity	The real-world benefits of the innovation are demonstrated and accepted. Tools and methodologies are increasingly stable as they enter their second and third generations. Growing numbers of organizations feel comfortable with the reduced level of risk; the rapid growth phase of adoption begins. Approximately 20% of the technology's target audience has adopted or is adopting the technology as it enters this phase.
Years to Mainstream Adoption	The time required for the innovation to reach the Plateau of Productivity.

Source: Gartner (July 2023)

Table 3: Benefit Ratings

Benefit Rating ↓	*Definition* ↓
Transformational	Enables new ways of doing business across industries that will result in major shifts in industry dynamics
High	Enables new ways of performing horizontal or vertical processes that will result in significantly increased revenue or cost savings for an enterprise
Moderate	Provides incremental improvements to established processes that will result in increased revenue or cost savings for an enterprise
Low	Slightly improves processes (for example, improved user experience) that will be difficult to translate into increased revenue or cost savings

Source: Gartner (July 2023)

Table 4: Maturity Levels

(Enlarged table in Appendix)

Maturity Levels	Status	Products/Vendors
Embryonic	In labs	None
Emerging	Commercialization by vendors Pilots and deployments by industry leaders	First generation High price Much customization
Adolescent	Maturing technology capabilities and process understanding Uptake beyond early adopters	Second generation Less customization
Early mainstream	Proven technology Vendors, technology and adoption rapidly evolving	Third generation More out-of-box methodologies
Mature mainstream	Robust technology Not much evolution in vendors or technology	Several dominant vendors
Legacy	Not appropriate for new developments Cost of migration constrains replacement	Maintenance revenue focus
Obsolete	Rarely used	Used/resale market only

Source: Gartner (July 2023)

Acronym Key and Glossary Terms

Autonomous finance	A function in which processes and activities are partly governed and majority operated by self-learning software agents that optimize front-, middle- and back-office operations.
Continuous accounting cycles	Empowered by technology, the autonomous ability to record, report and disclose financial results.Leverages transactions attributes, predefined business models and accounting standards that are embedded into the cloud-based composable technology ecosystem.

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Understanding Gartner's Hype Cycles

Tool: Create Your Own Hype Cycle With Gartner's Hype Cycle Builder

Quick Answer: What Is Autonomous Accounting?

Predicts 2023: The Impact of Autonomous Technologies on FP&A and Controller Processes

5 Key Categories of Finance Transformation Activities

Drive Agility by Deploying a Composable Finance Technology Strategy

Characteristics of Companies With a Fast Accounting Close

Must-Have Digital Competencies for the Controllership

Infographic: Benchmarking the Use of Materiality Thresholds in the Close

Infographic: Accelerate Finance Transformations With Digital Finance Outsourcing

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Table 1: Priority Matrix for Hype Cycle: Autonomous Accounting

Benefit ↓	*Years to Mainstream Adoption*			
	Less Than 2 Years ↓	***2 - 5 Years*** ↓	***5 - 10 Years*** ↓	***More Than 10 Years*** ↓
Transformational		Agile Project Management Cloud ERP for Public Sector Composable ERP Digital Transformation Office	Adaptive D&A Governance Digital F&A BPO Digital Twin in Finance Self-Integrating Applications	
High	Cloud MDM	AI Governance Cloud ERP for Global Enterprises Hyperautomation in Finance Master Data Management Policy as Code Process Mining	Accounting Engines Anomaly and Error Detection Composable Applications in Finance	
Moderate		Financial Close and Consolidation Solutions Materiality Thresholds in the Close Process Modern Chart of Accounts Real-Time Event-Based Accounting Self-Service Analytics		

Benefit ↓	*Years to Mainstream Adoption*			
	Less Than 2 Years ↓	***2 - 5 Years*** ↓	***5 - 10 Years*** ↓	***More Than 10 Years*** ↓
Low				

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