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HYPE
HYPERAUTO
HYPERAUTOMA
HYPERAUTOMATION
HYPERAUTOMATION?

End-to-End Automation

Hype or Hyperautomation?

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CONTENT

Topics covered

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Digital operations are key to maintaining a competitive edge, but most organizations today operate with a mix of different levels of automation, from completely automated to fully manual processes.

Hyperautomation Whitepaper

HYPE OR HYPERAUTOMATION?

End-to-End Automation

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by Sandy Kemsley
Industry Analyst & Technical Strategy Consultant

SYNOPSIS

Digital operations are key to maintaining a competitive edge, but most organizations today operate with a mix of different levels of automation, from completely automated to fully manual processes. This variation across the value chain impacts efficiency and customer satisfaction, since an end-to-end process may move through several disjointed manual and semi-automated tasks to reach completion. Moving to a fully digital operation with end-to-end intelligent automation can significantly improve existing business operations, while enabling true transformation: the creation of completely new business models that allow an organization to outperform the competition and expand into new markets.

IT research firm Gartner defines Hyperautomation as "a business-driven, disciplined approach that organizations use to rapidly identify, vet and automate as many business and IT processes as possible", and identifies it as one of the top strategic technology trends. They predict the hyperautomation-enabling software market will reach almost $600 billion (US) in 2022 [1].
Is this just hype, or can hyperautomation help you transform your business and improve your operational processes?

What can you expect in this whitepaper?

→ **Understand** how **Hyperautomation** uses the right mix of technology to improve efficiency and customer satisfaction and support business scalability.

→ Read **how end-to-end automation** improves alignment with corporate goals, **speeds up development, and maximizes application capabilities.**

→ Understand how **end-to-end orchestration, low-code capabilities, best-of-breed approach and composability are key** to achieve transformation.

→ Dive into a property insurance use case to **better understand the methods, technologies, and benefits** related to Hyperautomation **in action.**

[1] Gartner, Inc., Top Strategic Technology Trends for 2022: Hyperautomation, (ID G00756559, 18 October 2021)

Hype or
Hyperautomation?
—

Ramping up from manual processes and simple automation to end-to-end intelligent auto-
mation requires a methodology for determining what can and should be automated, and a
comprehensive set of tools and technologies spanning multiple tool vendors. Gartner states
that "Hyperautomation involves the orchestrated use of multiple technologies, tools or plat-
forms."[1] But what sets it apart from past automation methods?

Classic process improvement techniques ana-
lyze a poorly-performing process, redesign it for
improved efficiency, then select and implement
automation technologies. Although this sounds
reasonable, it is problematic due to ad hoc manual
process analysis, local process optimization and
single-vendor automation solutions. There's also
little consideration of the potential impacts of new
technologies on process redesign: understanding
the capabilities of all available technologies
opens up redesign opportunities that just
don't exist if you're focused purely on
making a single manual process a
bit more efficient. The broader
and more capable the avail-
able set of tools, the more
creative and impactful the
potential solutions.

**Hyperautomation, in contrast, is about "smar-
ter" automation: choosing the right processes to
automate, then applying the right mix of techno-
logies to rapidly create intelligent automation
solutions on a broad scale.** This more compre-
hensive end-to-end approach uses different tools
as well as different methods. A typical initiative
includes the following phases:

[1] Gartner, Inc., Top Strategic Technology Trends for 2022: Hyperautomation, (ID G00756559, 18 October 2021)

1/5 UNDERSTAND
end-to-end processes and customer journeys

using business architecture methods such as value stream analysis, SWOT analysis and balanced scorecard. These identify the top-level business processes and metrics as a target for automation, while providing context to align automation projects with corporate-level goals.

2/5 SET
priorities for automation

by using data-driven analysis tools to discover current state processes, simulate the effects of change, and compare impacts. Process mining replaces manual as-is process modeling by introspecting system logs, while process simulation allows comparing the results of multiple scenarios. This objective analysis provides hard data to support automation recommendations.

3/5 CREATE
flexible end-to-end automation applications

using process and decision automation tools. Business process management systems (BPMS), case management (CM) and decision management (DM) are used to compose end-to-end processes spanning systems, and implement more granular processes to fill in the gaps. Packaged software, such as an enterprise resource planning (ERP) system or an insurance claims management system, are orchestrated by the BPMS/CM/DM within the end-to-end processes. Low-code development tools, coupled with cloud-based services architectures, enable the fast assembly of components from any tool vendor into applications.

4/5 AUTOMATE
repetitive activities

using robotic process automation (RPA), replacing human actions to interact with legacy applications that lack a programming interface. This may completely automate a task, or may be invoked by a worker as a "helper" to assist and recommend. RPA can be implemented in advance of process automation as a stopgap measure to assist productivity, but is more effective when considered as an intelligent activity that is composed into an end-to-end process.

5/5 AUGMENT
complex human decisions

using artificial intelligence/machine learning (AI/ML). These automate less structured tasks and decisions that would typically require human input, and provide recommendations to workers to assist with their decision-making. AI/ML-powered chatbots interact with customers and replace human agents for simpler inquiries, balancing costs and customer satisfaction.

This approach yields the following benefits:

→ Improve alignment with corporate goals by keeping the end-to-end processes in view

→ Focus automation efforts in the right place using objective analysis of business operations

→ Minimize development time and maximize application capabilities by using low-code tools to compose applications from best-of-breed components

→ Improve quality and customer satisfaction by integrating intelligent agents and decisioning

Not just AUTO MATION TRANSFORMATION

McKinsey's global industry research indicates that organizations that don't automate and innovate are destined to fall behind. Their analysis of top-performing financial institutions [2] shows that "tech-enabled innovation and fast go-to-market" are common characteristics, and suggests that traditional banks need to "increase their innovation metabolic rate." The same is true of many other types of businesses, since the disruption that we've seen in businesses over the past two years of the pandemic is really a disruption of business processes, both external supply chains and internal company processes.

Some organizations have had a precipitous drop in business volume and are struggling to realign operations and open new markets; others have had a huge increase in volume and customer satisfaction is suffering while they attempt to keep up with demand. Physical supply chains have been disrupted, requiring that goods be serviced from new manufacturing locations. A different customer base may require different ordering, packaging and distribution processes. Employees may be working from home, or in new office configurations, using new technology to collaborate with their teams. The very nature of how work is done has been transformed.

End-to-end intelligent automation is not just a matter of better automation, it also provides a platform for organizations to move into new markets and invent new business models in the face of business disruption.

For example:

→ Fully-automated claims and mobile chatbot interfaces allow an insurer to move into lower-value and microinsurance markets while remaining profitable.

→ Consumer-focused online ordering coupled with agile packaging and delivery processes allows a grocery company that normally serves a commercial restaurant market to pivot to the home market, supplying a much higher volume of lower-value orders. McKinsey's research on the retail grocery market [3] emphasizes that "technology is in the process of disrupting several parts of the online value chain, from user experience to order preparation to the last mile", and notes that automation is transforming the cost models, an observation that applies to many other types of supply chains.

→ Online identity verification and digital signatures in legal contract procedures can replace face-to-face meetings with online meetings.

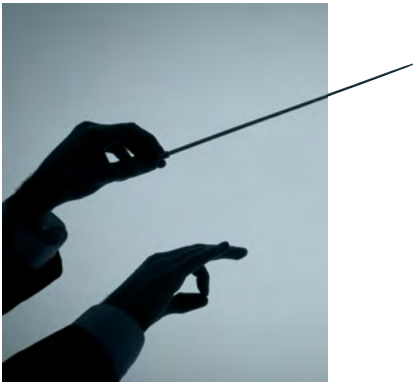[2] McKinsey & Company, The great divergence: McKensey Global Banking Annual Review 2021, December 2021.
[3] McKinsey & Company, Navigating the market headwinds – The State of Grocery Retail 2022: Europe, March 2022.

What's Required for End-to-End Automation?

In this section, we'll look at the technological concepts and capabilities required to make end-to-end automation successful, and see how they fit together.

Process Orchestration for the Big Picture

First and foremost in end-to-end automation is understanding the big picture: what are the main process flows, where do decisions need to be made, what are the main customer touchpoints, and what metrics indicate whether milestones and goals are achieved. This top-level orchestration is the link between the corporate goals and metrics defined in the business architecture, and the operational processes and decisions implemented in automation systems. For maximum flexibility and capabilities, end-to-end process orchestration is designed and automated using a process or case management system (BPMS/CM).

A BPMS/CM is more than just a platform for modeling and executing self-contained processes. It is also a low-code composition environment that enables the creation of applications that can invoke a wide variety of external activities and services, from RPA bots to API calls into legacy systems. Any function that can be called using a standard interface can be added as a step in a graphical process model within the BPMS/CM. In essence, **BPMS/CM is the glue that holds the end-to-end automation together.**

Market disruptions have taught businesses that speed and agility are competitive differentiators. **Low-code platforms significantly reduce the time required to design, build and deploy new applications.** Applications are designed using graphical representations such as checklists and user interface forms, or the more advanced model types found in BPMS/CM. Development moves quickly from a user interface mockup to an operational prototype to a deployed application, all without redeveloping the application in a different language or tool.

Low-code also reduces the software development skills required to create applications, allowing business analysts to create applications from start to finish without requiring input from IT developers. But it's more than just enabling "citizen developers" to create simple applications: low-code can greatly reduce the time for technical developers to develop robust core applications.

Low-code for Fast Time to Market
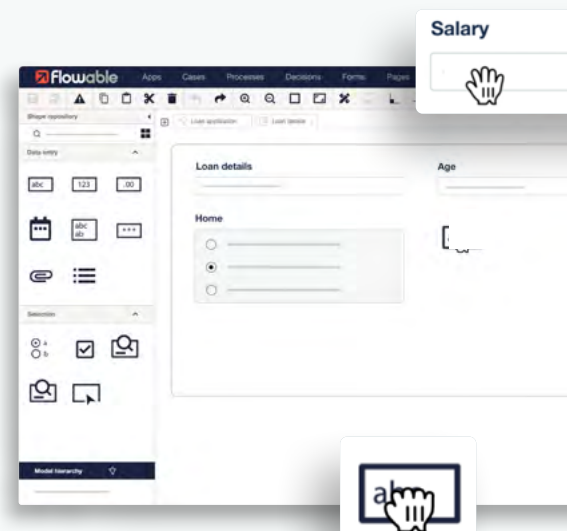
Composability for Business Agility
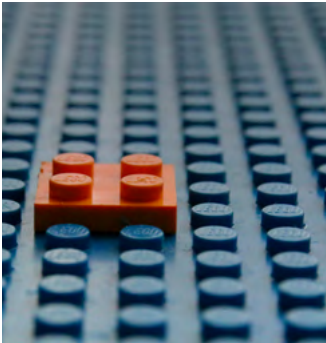
Low-code platforms increase agility through faster application development, but if low-code is only used to create simple applications faster, that doesn't improve overall business agility. Applications that are mission-critical, customer-facing and require a fast time to market rely on **composability, which allows low-code applications to include more complex functionality that could not be developed directly within the low-code environment**. Standardized programming interfaces allow any service or component to be called from the low-code application, and enable component reuse across multiple applications.

Composability isn't a new concept: designing software as reusable components dates back to the 1940s. Today's composability, however, has two characteristics that elevates it far beyond previous generations. First, standardized service interfaces (e.g., REST) provide **interoperability.** Anyone can create a software service and make it available for anyone else to include as a component in their application, regardless of the programming languages used, or the locations of the people involved. Second, **marketplaces** of business processes and components promote reusability, whether these are purely internal libraries or external service directories. Application developers can easily find a component that suits their needs and add it to their application, whether in a low-code or more traditional software development environment.

Best-of-Breed

The combination of low-code and composability are fundamental to supporting business agility, but a third concept is necessary to ensure optimal functionality of the applications: **leveraging best-of-breed components to compose applications.**

Ideally, each component used in a composable environment is a self-contained microservice, allowing a developer to add or remove it from an application without impacting other components or applications. Unfortunately, many low-code platforms have the concept of composability, but expect you to create applications using only the inseparably-coupled capabilities that they provide in their platform. Even if you can include a third-party component – for example, swapping out the platform provider's machine learning services for a best-of-breed competitor, or adding an industry-specific intelligent chatbot – they still require you to license and deploy their unused components. In general, monolithic application platforms are walled gardens that work best if you only want to use tools from inside the walls.
Creating lightweight and agile enterprise-strength applications, then, relies on avoiding monolithic environments.

Best-of-Breed to Maximize Capabilities

Select the best low-code environment for your application builders, which may also be your BPMS/CM. Select the best analytics platform, the best RPA, the best AI/ML and other components for your particular needs, and compose them into applications within the low-code environment. With cloud-based environments, you don't even need to worry about where the component exists, only that it performs when you call it using a standard interface.

Best-of-Suite
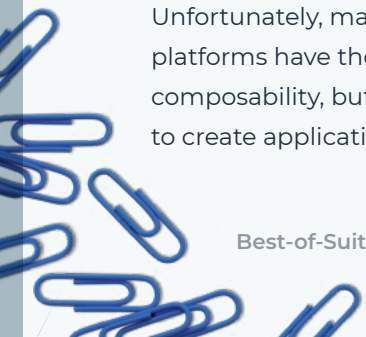
Automation & Augmentation
to Empower Knowledge Workers

Using low-code platforms that allow composition of best-of-breed components provides a solid technology underpinning for business automation. However, it's important to consider how to use these tools to design end-to-end automation that best serves the business needs. Here are ways to use automation to allow knowledge workers to focus on operations that require their skills:

→ **Enable customer self-service.**
Allow customers to enter orders directly, eliminating internal data entry tasks. Intelligent chatbots can handle many customer inquiries, escalating to a customer service agent when required.

→ **Automate repetitive work.**
Information flows directly between the customer portal and back-office systems, eliminating up-front data entry, reducing cycle time and improving data quality.

→ **Enable work from anywhere.**
Completely digital customer files allow knowledge workers to access documents required to complete their work, regardless of location. A supervisor uses a central dashboard to monitor team workloads, upcoming deadlines and overall work progress, regardless of the location of the individual workers.

→ **Automate higher-value, less-structured decisions with AI/ML.**
Straightforward decisions that previously required human decision-making can be automated, such as auto-adjudication of low-risk insurance claims. This reduces end-to-end time and also frees up highly-skilled knowledge workers for more complex scenarios.

→ **Provide assistance and recommendations to knowledge workers.**
Knowledge workers use RPA bots as assistants to eliminate copy-and-paste between applications and documents, while AI/ML provides recommendations on next best actions for a specific activity.

→ **Automate low-risk decisions through rules.**
Simple, repetitive decisions such as workload management are handled by automated rules.

End-to-End Automation in Action

To better understand the methods, technologies and benefits, consider a property insurance claims use case, where the process starts with the policyholder completing a first notice of loss (FNOL), and finishes with the claim decision and payment. Most claims operations use a packaged claims management system, but many essential processes and content are not handled by that system; instead, the gaps are filled with ad hoc procedures, implemented differently by each worker, and driven by paper documents, spreadsheets and emails. **This paradigm – a line-of-business system augmented by ad hoc procedures – is common in operational processes in many industries, and the end-to-end automation methods and technologies described below can be applied to other industries with similar benefits.**

An end-to-end, intelligent automation approach radically changes the claims process:

→ **The claims management system is orchestrated and extended using process and case management.** The BPMS/CM is used to create end-to-end applications by linking activities from the claims management system for core claims processing, decision management for automated decisioning, RPA to reduce manual data entry, and AI/ML-based agents for customer interaction and more complex decision-making.

→ **A customer-facing portal** provides a unified interface for capturing information and receiving updates, integrated with an intelligent chatbot and live agent interaction.

→ **An employee-facing portal** provides a unified workspace for all activities not performed within the claims management system, while a supervisor portal provides views of metrics and team workload.

The end result:
claims are resolved faster and more consistently, with less human effort and lower costs, while improving customer satisfaction.

Compare the difference before and after applying end-to-end automation, where many of the previously-manual tasks are performed by intelligent automated agents ("apps"):

1.

Before // Without E2E automation

Accept and create claim (all manual):

- Receive FNOL (first notice of loss) form by fax, paper or email
- Validate data in policy admin and claims systems
- Create claim and manually enter data
- Assign claim to claims manager

After/ With E2E automation

Accept and create claim:

- Policyholder enters FNOL (first notice of loss) in customer portal, with data validated in real-time
- Automatic claims creation
- Automatic claims assigned based on workloads
- Auto-adjudication settles simple claims immediately
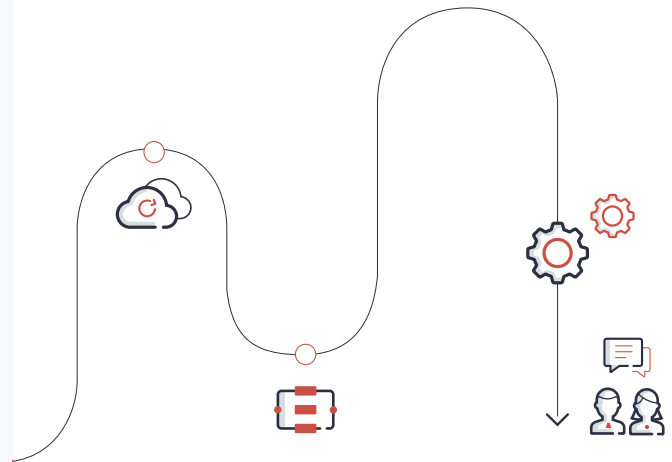
2.

Claim resolution cycle (all manual tasks by claims manager):

- Review file and all new documents, both hardcopy and electronic
- Perform data entry or copy/paste between documents and systems to capture data and notes in claims system
- Determine missing information, and request it via claims system or ad hoc methods (email or mail)
- Pend file until information arrives, as hardcopy or electronic email attachments
- Follow up on request if not received

↻ *Repeat until claim can be resolved.*

Claim resolution cycle:

- Claim file app automatically requests and captures information:
- Extracts data from new documents and enters in claims system
- Requests missing information
- Follows up on requests if not received
- Auto-adjudication settles claim if possible; otherwise, a helper app assists the claims manager:
- Recommends next actions or decisions
- Copies data between documents and systems to assist manual tasks

↻ *Repeat until either auto-adjudication or claims manager can resolve claim.*

**3.**

Before // Without E2E automation

Claim decision:

- Claims manager approves/denies

- Based on rules, send to supervisor to review decision

- Claims manager closes claim and sends paper claim file for archive

After/ With E2E automation

Claim decision:

- Helper app recommends decision

- Claims manager approves/denies

- If decision does not match automated recommendations, send to supervisor to review decision

- Auto-close claim file
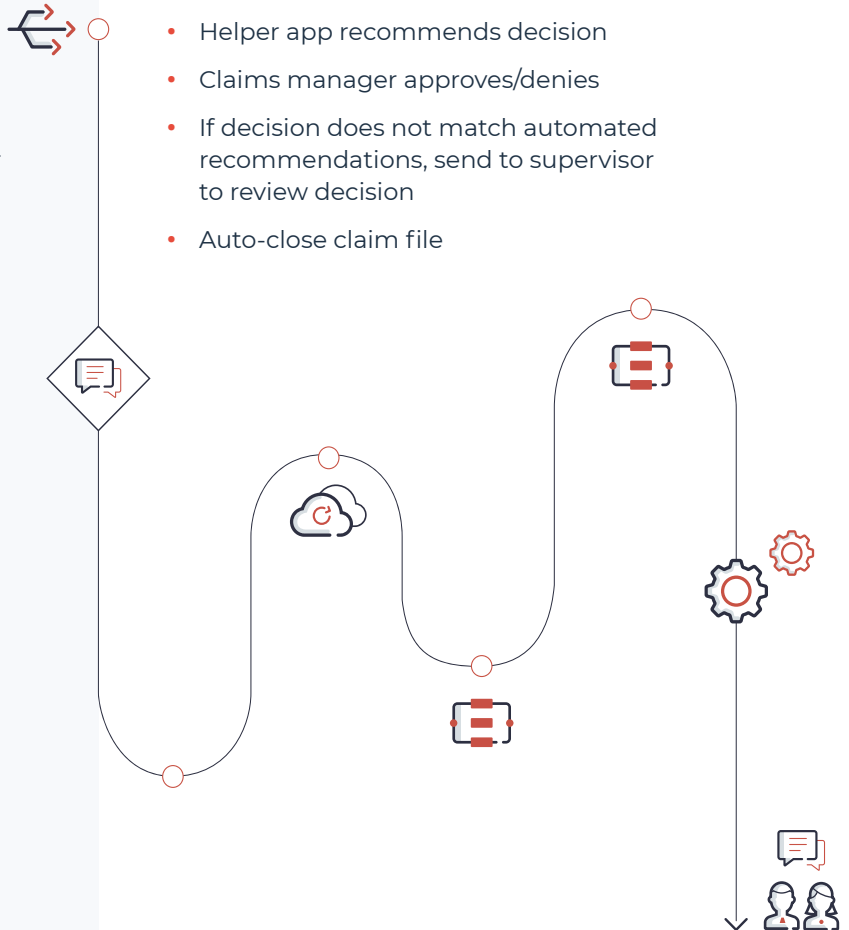
4.

Other activities during claim resolution:

- Policyholder phones/emails for updates

- Supervisor monitors work in progress and manually tracks deadlines

- Claims manager maintains paper claim file to hold hardcopy documents

Other activities during claim resolution:

- Policyholder interacts with customer portal to see details of claim progress

- Milestones for SLA/regulatory deadlines are automatically tracked and escalated

Using Hyperautomation to Transform and Optimize Operational Processes

In the above example, **the benefits of end-to-end automation across the entire process** are clear:

Reduce end-to-end time
Having the customer enter their own claim data, automated integration to the claims management system, and integration of many repetitive internal tasks shortens the time to resolve a claim and reduces the data entry error rate.

Improve customer satisfaction
Auto-adjudication resolves low-value/low-risk claims almost immediately. A customer portal provides process transparency for more complex claims, allowing the policyholder to access information about the progress of their claim through a chatbot or live agent.

Improve quality and consistency of decisions
AI/ML reduce manual work and provide recommendations to the claims managers based on regulatory guidelines and past decisions.

Meet regulatory and operational SLAs
Automation reduces cycle time, and monitors manual steps for approaching deadlines.

Agility, quickly create or change operations
Operational processes are created and modified by assembling reusable components in a low-code environment. In the event of a sudden business change, an existing process can be modified in a matter of hours-code environment. A completely new process for a new product can be quickly assembled from existing components.

Decrease operational costs
Automation decreases operational costs per transaction. For growing organizations, that allows doing more work with the same number of people, and being able to focus on training and retention of highly-skilled workers to provide competitive differentiation.

Final Thoughts

As the writer William Gibson once noted, "The future is already here – it's just not evenly distributed". That uneven distribution can be seen in the contrast between companies that thrived during periods of unprecedented disruption, and those that barely survived. Companies that thrived – and are more likely to be able to handle whatever the future still has in store – were able to pivot to change their target market, their workforce, and their supply chains. **Hyperautomation enables businesses to automate their current operational processes, but also quickly pivot their business model and create new products and services in the face of changing market requirements. When properly implemented, hyperautomation can clearly live up to the hype.**

ABOUT THE AUTHOR

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Sandy Kemsley is an independent analyst, consultant and process architect specializing in digital process automation, business process management and the social enterprise. She writes the popular **column2.com** blog and is a featured conference speaker on BPM and digital automation.

She is a contributing author to books on social BPM and adaptive case management, the winner of the 2016 Marvin L. Manheim award for significant contributionsin the field of workflow, and recipient of the 2019 Workflow Management Coalition award for Outstanding Business Transformation Consultant.

VISION

Flowable in the End-to-End Automation Picture

By Paul Holmes-Higgin
Chief Product Officer at Flowable

Flowable has already established itself as best-of-breed for executing business processes across a range of domains, from Finance, Healthcare, Government, Media, IT to Manufacturing. Flowable is also widely used to compose E2E automation, thanks to its innate BPMS/CM capabilities, by orchestrating the overall flow across multiple services and systems. Its rich interfaces allow it to be controlled by external systems, as well as controlling other systems with model-driven flexibility. With Flowable, you can run and test automation concepts before needing to get any development resource involved; go live, knowing it's possible to quickly tweak things if necessary.

The goal of Flowable is to provide the best-of-breed composable platform to create and evolve innovative end-to-end business processes. This is what we at Flowable have been evolving over years of enriching business process management to meet the overarching needs of business automation.

Flowable. Intelligent Business Automation

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