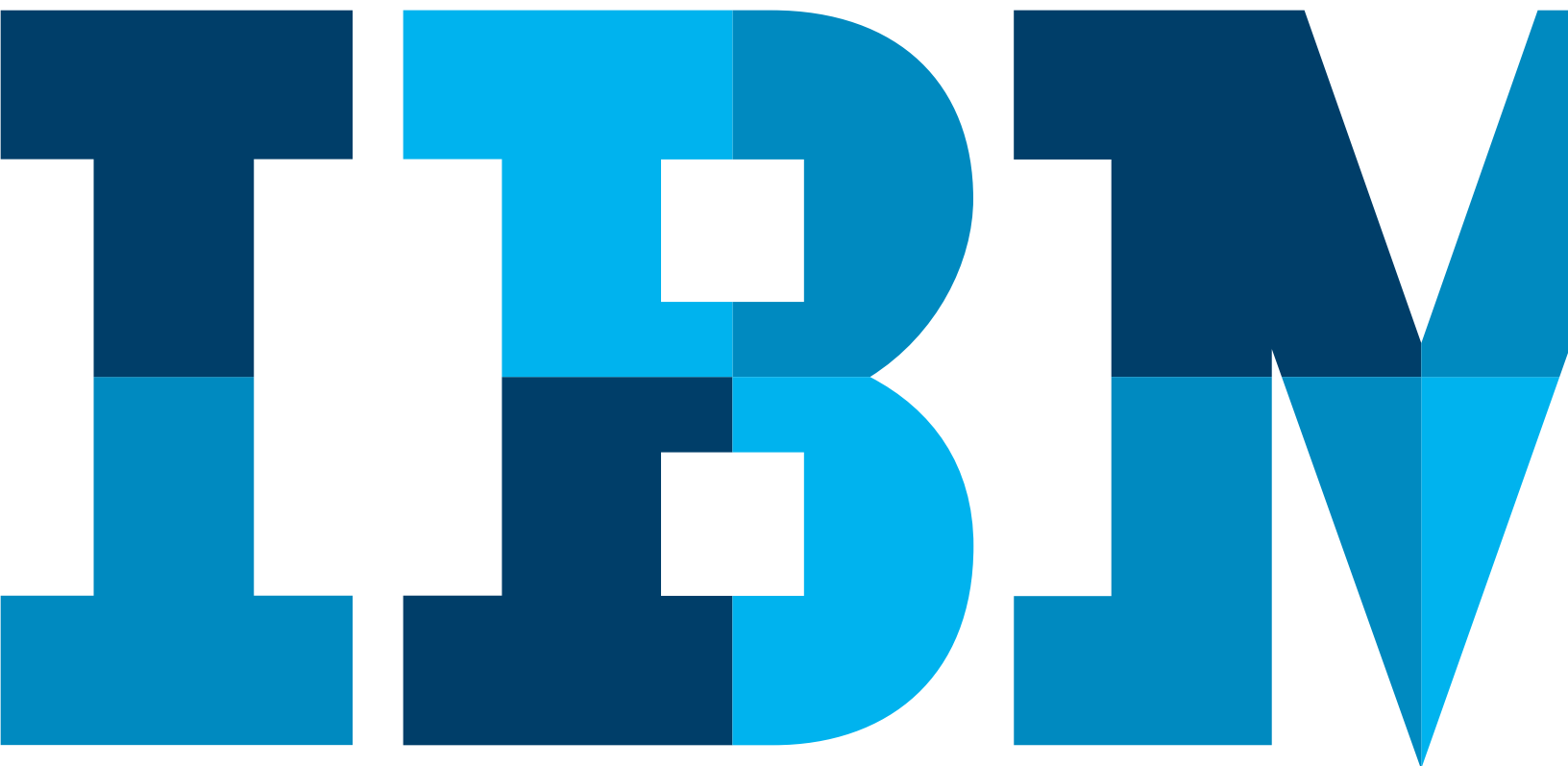# Taking Operational Decision Management to the Next Level

Recognize opportunity and risk - and act in context with data to drive digital transformation

Contents

Introduction

The need to elicit meaning from data and apply it to business decision-making has never been stronger. Today, businesses have access to more data from more sources, and greater potential to uncover valuable insights from it. Unlocking this potential has been the challenge, especially since the value of operational data deteriorates so quickly. Consider that the average half-life of data for tactical decision-making is less than 30 minutes, and in some cases is as short as six seconds. After that, only 30 percent of data has any value.[1]

Consider a hospital that's trying to ensure that emergency patients never have to wait for care. While historical information about emergency admissions is useful for triggering decisions about staff schedules and other actions that can help achieve this customer-centric goal, immediate information adds another valuable layer of insight. For example, they may know that admissions tend to go up on weekend nights and plan accordingly. But what if they also know that a pile-up has just happened on the interstate on a particular weekend night? That information has immediate value for decision-making. Taken together with other contextual information such as the number of rooms available, the number of doctors and nurses working at different times, and the rate of patient admissions so far that day, it can be used to trigger operational decisions to optimize scheduling and staffing.

This example illustrates the speed of response that's possible within a rich context that leverages historical data as well as specific, immediate data about events that are happening in a particular time and place. By using all the sources of data available today — including mobile, social, the Internet of Things (IoT) and existing operational data — in conjunction with new tools that support real-time operational decision management, businesses are finally able to not only collect big data, but also act on it in real time to improve day-to-day operational decisions.

And while an example from healthcare is illustrative, the idea applies more broadly to a variety of industries. Financial services, logistics, travel, entertainment, retail — all these and many others stand to realize significant business advantages from the ability to use data to uncover opportunities or risks and then make operational decisions in context to grow their business more profitably.

This paper will explore why organizations across a range of industries need the latest Operational Decision Management (ODM) capabilities. New ODM solutions enable them to better identify opportunity — and risk — and turn those insights into action to respond in the most effective ways possible.

Figure 1. Using the latest ODM capabilities, organizations can examine data in context to identify opportunities and risks.

ODM: Next generation decision management

ODM began as a way to automate decisions through business rules management systems (BRMS) technology. It's the technology that, for example, allows an insurance company to dynamically generate quotes on demand by applying business rules governing eligibility, underwriting and rating to the information customers provide when they go online to request information about premiums. Here, a procedural request triggers a rules-based response. The capabilities evolved to add time-based event pattern detection (complex event processing), but managing the data presented challenges.

What's different now is the ability to use new and more immediate sources of information to take business rules management and complex event processing to a higher level, bringing more dimension and precision to decision-making. This ability to leverage more information and more kinds of information about people and events enables decisions about those people and events in context and in real time. New constructs and tools are now available to manage and represent all the time-sensitive data that your business must handle. And that makes the already considerable value of ODM even greater.

Making decisions in context

When it comes to making the best possible business decision, it's not always enough to know that a customer is taking a particular action. Knowing the circumstances under which an action is occurring — in other words, the context for the behavior — can be just as important, if not more so.

Today, the world is full of sources of contextual information, from mobile devices to social media to IoT devices. And ODM today is about using analytics to find patterns in that information, uncovering insights that will identify opportunities and risks, and improving the decision-making process. For the first time, there's the potential to be proactive and make operational business decisions in context.

A financial institution, for example, could use next generation ODM to track how customers navigate through articles on the company's investments web page. What are they reading?

What were they reading before? What's changed? There will be many, many data points that inform and enrich the context that drives customer behavior, and detecting these behavior changes opens up new opportunities to engage the customer.

ODM can help identify not only opportunity, but also risk. In another area of bank operations, a financial institution could use ODM to more accurately detect possible credit-card fraud faster. The key is the ability to use evolving contextual information to identify new situations for which the bank can flexibly create and deploy new rules that quickly detect these additional fraud threats and trigger appropriate action such as blocking transactions. Successful fraud detection hinges on the quality of data and time sensitive decision-making. Two out of three credit card fraud alerts turn out to be legitimate customer purchases, and blocking these simply annoys the customer.[2] But with ODM, the future is wide open to change the game on this critical metric.

Making decisions in real time

The example of the hospital emergency room at the beginning of this paper calls attention to another important aspect of context: time. If ten patients have arrived in the waiting room at a time when one or two would be the norm, that tells decision makers they need to adapt to accommodate the change in demand before it becomes a challenge for resources. In this type of situation, historical information will help establish baselines for action, but real-time data is an essential part of the equation.

Similarly, if a retail customer is in a store, able to make a purchase, that's the time to act; a report that the customer was in the store three days ago doesn't have value in the same way. A decision made in context means a decision made in light of complete information that includes both historical *and* immediate information. It also means a decision made in a way that will drive the organization toward a business goal — whether that means increased efficiency, improved customer satisfaction, more conversions or sales, or some other measure of achievement.

Using next generation ODM to recognize opportunity and risk — and act on it

Next generation ODM today can deliver the ability to 1) understand data in context, 2) apply analytics to it to identify opportunity or risk and 3) make an informed decision about how to act on it. Taking that action is the next essential step. After all, recognizing an opportunity is one thing, but seizing it is another. Once ODM has recognized a pattern that suggests opportunity or risk, one of the things the organization can do is execute predefined business processes to take the best possible action and manage the action to conclusion.

To use another example from the financial industry, consider a retail banking scenario in which the bank correlates CRM data indicating a recent loan payoff with Twitter posts expressing a craving for a new car. The opportunity for an offer is clear; the next step is to apply the appropriate business process to offer the customer a vehicle loan. This scenario is a reminder, too, of the growing importance of Twitter and other social media as new sources of time-sensitive digital data for operational decision-making. Next generation ODM can handle a Twitter data stream just as it handles all the streams of disparate data coming in — tracking it, considering it in context with other data, applying predictive analytics and making better, more targeted decisions as a result.

Next generation **ODM** can deliver the ability to:
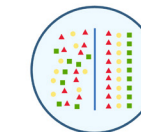
Understand data in context

Apply analytics to it to identify opportunity or risk

Make an informed decision about how to act on it

The seamless path from insight to action

The key to deriving the maximum benefit from ODM technology today is the ability to seamlessly move through the decision journey — first garnering insights from data in context, then establishing decisions based on those insights and, finally, triggering the right business processes to carry out decisions.

For example, many transportation companies face a variety of fraud risks associated with fueling, ranging from diverting fuel away from the vehicle, train or plane for which it's intended to using a company fuel card to refuel a personal vehicle. To control these risks, companies can use ODM to directly compare information from streams of geolocation events that show fleet activity and check it against fueling activity. If there are discrepancies that suggest fraud, the company can follow through by making changes in how fueling activities are managed, such as assessing fines and warning suppliers.

Business process management (BPM) is necessary to manage the full course of action in a scenario like the one described above that may require multiple people to do multiple things over a potentially long period of time. It's what makes it possible to be sure action is completely documented and carried through.

Without a solution that connects ODM to BPM, organizations will find it challenging to link decision and action. Therein lies the benefit of an integrated solution that's designed to make the connection between ODM and BPM systems seamless and automatic: It can smooth the path from detecting an opportunity to triggering a business process to act on it.
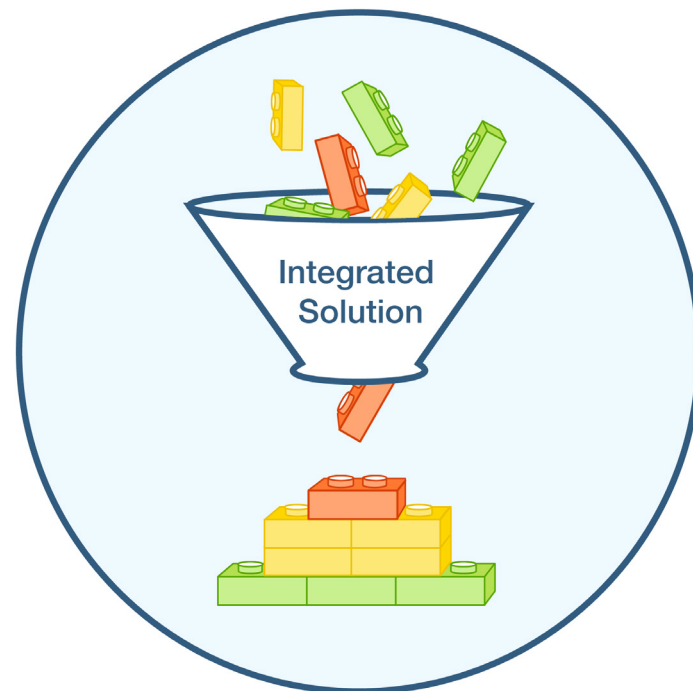

Figure 2. An integrated approach that seamlessly connects ODM and BPM makes it easy to move from collecting and assessing data to identifying opportunities and acting on them.

The IBM Advantage

IBM offers the entire scope of capabilities and resources to provide companies with the competitive advantage that results from customer-centric business transformation. An unsurpassed depth and breadth of solutions comprise a comprehensive set of collaborative, role-based capabilities designed to help model, simulate, execute, change, monitor and optimize core business processes.

IBM's Smarter Process solution involves the infusion of every process with intelligence and expertise to create a framework in which all processes are built around a determination to delight the customer. With more than 5,000 customer engagements, that represent three times the install base of the nearest competitor and 20 data centers around the world, the IBM Smarter Process Platform offers unsurpassed capabilities.

IBM Operational Decision Manager Advanced

IBM Operational Decision Manager Advanced enables business professionals to automate and govern repeatable, day-to-day decision-making across business processes and applications, improving business insight and delivering relevant and personalized outcomes. The software manages business logic outside of applications — reducing the reliance of business professionals on IT and empowering them to create and manage business rules. This empowerment allows you to address shifting business contexts in near real-time and improve responsiveness and performance.

Additionally, predictive analytics can be used to act upon data to anticipate business needs and beat the competition. Organizations can take advantage of the data available to them to enrich and improve their business decisions, delivering customer-centric digital transformation. They can now capture events, build context and apply it to operational decisions in near real-time. In doing so, they can detect situations as they occur — presenting risks or opportunities — to enable action. This transformation is being led by business users, bringing their skills and expertise to those repeatable decisions.

IBM ODM Advanced has a user-friendly interface that allows business experts to write rules in natural language — not code. They can easily and consistently implement, test and deploy decision changes to meet new market demands and policy requirements. Understanding how business decisions that drive operations are made and applying those decisions across applications can reinvent business operations.

For more information on IBM ODM Advanced, please visit: http://www-03.ibm.com/software/products/en/category/operational-decision-management

IBM Business Process Management

With IBM Business Process Manager, clients have the benefit of a complete set of market-leading processing capabilities to optimize business operations delivered in a single, unified platform. The platform is simple enough to engage all knowledge workers and process participants, regardless of their role or size of the project, and powerful enough to scale in support of enterprise-wide transformation. Distinct levels of capability are designed to meet the needs of a wide spectrum of clients and include broad design, development and governance features. Clients can start simple and expand their infrastructure as their business grows, and IBM is the only BPM vendor that supports all styles of work, including human-centric workflow, case and straight-through processing. Deployment options include on premise, public and private cloud, and pattern deployment as part of IBM PureApplication. With the recent offering of hybrid cloud options, customers have access to a distinct option for simplifying operations and reducing ownership costs.

Agreeing on Terms

Here are definitions of key concepts you'll encounter as you read through this paper.

- **Act in context with data:** To take advantage of the tremendous amount of contextual data that's generated around their business, organizations must operationalize it with real-time action.

- **Business events:** Actions, or patterns of actions, that occur and have relevance to the business.

- **Business rules:** Logic written in natural language that provides the basis for automating operational decisions.

- **Operational decisions:** Decisions that relate to the daily operations of the organization. They are frequent, typically high in volume and usually automatable.

1. *Measuring the half life of data*, Nucleus Research, 2012
2. creditcards.com survey, 2014