YOUR DIGITAL TRANSFORMATION PROJECT IS MORE COMPLEX THAN YOU THINK

Conquer Complexity and Discover Secrets for Success

INRULE

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INTRODUCTION

There are three absolutes when it comes to digital transformation.
The first is that everyone has a different definition of what digital transformation means to them.

The second is that when executed well, digital transformation projects deliver tremendous value to both top, and bottom-line results.

Here's an example: a leading mortgage lender uses multiple back-office technologies to originate a loan. This process involves numerous people from different departments. And it can take days, leading to higher-than-desired applicant abandonment rates.

Now picture this same mortgage lender, post digital transformation. They offer an online self-service portal where borrowers can apply for loans, getting a preliminary determination in a matter of minutes. Their applicant abandonment rates go down, while origination processes are streamlined.

This brings us to the third absolute: digital transformation projects can be more complicated than they first appear.

Before considering technology options, implementation efforts, and maintenance costs, the biggest hurdle for digital transformation – and the thing most organizations don't consider until well down the path – is understanding the decisions to be made within this new paradigm. The criteria used and how to make it automated, transparent, and – most importantly – easily updatable.

In fact, extracting enterprise decision-making from code, and making it the center of focus early, can make the difference between a project being just another technology migration and it becoming truly transformational.

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THE DECISION AUTOMATION TIPPING POINT

Consider for a moment the transformation that took place in manufacturing in the 1960s. Companies were considering adding robots to handle simple, repetitive tasks such as welding, painting, or assembly. But the significant up-front cost of robotics made businesses wary to invest. And the effort to document the human activity, work procedure, and collective know-how required to program the robots with industrial automation specifications also posed a significant challenge.

However, the productivity and throughput improvements, enhanced safety, and the direct labor costs savings were so significant that, in the end, the return on investment was worth it.

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DECISION AUTOMATION IS AT
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There are two powerful differences between the automation of repetitive tasks through robotics and automating decisions as part of a digital transformation initiative.

The first is that automating decisions typically means centralizing them in such a way that they can be leveraged broadly across the organization. For digital transformation, this abstraction means, rather than being isolated to perform a single repetitive function such as welding a few joints on a chassis, centralized business logic can be called upon by nearly every area of an enterprise to deliver rapid, in-context, and consistent decisions.

The second area where these diverge is where the seat of knowledge resides. When a portion of a manual manufacturing process converts to automation, the knowledge of how to modify the repeated task transfers from a line worker with hands-on knowledge to a robotics automation engineer. As processes change, it is up to the automation engineer, rather than those who directly work on the line, to reprogram the robot.

With decision automation, the power to keep decisions up-to-date with the latest demands of the market remains squarely with subject matter experts in the organization. Rather than being buried in lines of code maintained by software engineers, or in custom configurations of off-the-shelf software understood only by consultants, decision platforms make maintaining business logic understandable to both technical and non-technical stakeholders.

Like the transition to robotics was for manufacturing, the process of moving to decision automation is complex.

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COMPLEXITIES OF ENTERPRISE DECISIONING

"It depends." How many times have we asked a question, with this as the initial response? The dependencies tend to compound quickly, especially when it comes to considering decisions across an enterprise.

Transitioning decision making to a digital environment is complex – not because decision technology is complicated, but because decision making itself is inherently complex.

There are myriad stakeholders within a business, including C-level executives, line-of-business leaders, functional leaders (such as sales, marketing, production), individual contributors, and analysts. And each possesses their own definition of success and set of criteria

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for making a decision. In addition, each function may have different names for the same thing. Revenue tracked by the sales group is called something different than the accounting group's revenue because of how and when each group recognizes it. So, when automating a decision with a revenue component, groups need to agree when to recognize revenue within a given decision.

Many companies' first step to automate decisions is to build a rudimentary decision engine in-house. One of the major pitfalls in creating a decision engine is combining processes with decisions. Traditionally, technical staff leads early automation projects, and despite best efforts, decisions are often embedded in code.

This practice has two disadvantages. First, it is difficult to separate the decision-making code from process-related code. Second, it's hard to translate the code into business language to make decisions transparent to all stakeholders.

To ensure a greater chance of success, a decision platform should:

- Separate the decision from the process.

- Let people without technical backgrounds understand, author, and modify decisions.

- Remove obstacles that hinder understanding a decision, enabling sharing and gaining agreement among stakeholders.

In addition, with the increasing use of analytics, artificial intelligence (AI), machine learning (ML), and real-time data, a decision platform should also be able to create decisions that can adapt in near real time.

CROSSING THE AUTOMATION CHASM

Let's revisit the digital transformation project of developing a self-service portal for mortgage loan origination. Consider the volume of activities previously handled by loan origination staff – a volume likely to have significant fluctuation depending on factors like interest rates and consumer sentiment. While these individuals are initially influenced by policies and training, they make decisions every day, using their wits and experience, that impact the business and enhance customer experience.

How should a mobile application handle the questions and decisions that previously would have been asked of a loan originator? How does the experience differ based on who is using it, market analytics, or where the property is located? What are the tools and resources the originator or underwriter typically used to move engagement forward while ensuring appropriate risk coverage for the institution?

Moving from collective knowledge and written policies to automating a decision-making process means getting past the "it depends" stage. How? By defining up front everything on which the decision hinges.

> *Has your business successfully crossed the automation chasm? Take our Decision Automation Readiness Test to learn where your business is in the decision automation journey »*

What are the criteria for making a decision? Are there multiple reasons for an outcome to be decided? How should those reasons be recorded? Is a similar decision already being made in a configuration setting of another system? Are there documented polices or regulations that relate to this decision? Can we decide with the information we have on hand if data is missing? If not, what would an error look like and what should happen instead?

Clearly, a team needs to come to several agreements before the project can progress. They need to determine not only what the decisions are to be made but also the criteria and how to evaluate them. In addition, making sure the decision being made is understandable by all stakeholders across the enterprise is crucial.

Notice that we haven't spoken about the technology, just the details inherent in defining a decision to be made. There can be thousands of small things involved in the formulation of a decision. Understanding, capturing, and using these small things at scale is key to bringing structure — and simplicity — to that complexity.

By agreeing on these foundational elements, we can then introduce technology to help us author, structure, and automate the logic that will govern and automate the decision. InRule offers several resources to help get your project off to the right start. The blog post *Rule Harvesting Techniques for Excel Workbooks* is an excellent place to begin.

A decision platform is a tool designed to help automate and centralize decisions. It provides technical and non-technical users the power to author decision logic, leverage decision intelligence, and manage the full decision lifecycle.

COMMON DECISION AUTOMATION OBSTACLES

Before we move forward, let's sum up what we've covered so far...

- The big thing that separates true digital transformation from just another technology migration is how early and thoroughly organizations should put decisions at the center of their project.

- Decision abstraction, centralization, and automation can be as transformative to businesses as robotics has been to industrial manufacturing.

- Decisions can be messy.

With the right technology, those messy decisions can become easy to author, automate, and maintain by subject matter experts, even as the rules take in increasing amounts of data to ensure consistent outcomes based on myriad dependencies.

Let's look at a couple common challenges when digitizing decisions and how they can be solved with decision platforms.

Miscommunication between subject matter experts (SMEs) and developers can happen any time a SME needs a developer to turn an idea into code. The business change the SME needed to implement — needing to rapidly respond to a change in their market, may not be what the developer translates into code.

This type of error is often complicated to detect and costly to correct. By the time it's discovered, it may have been embedded with other code updates that were happening in parallel, or the change may have needed to be implemented in multiple systems, making finding and fixing the problem even more difficult.

By contrast, decision platforms enable SMEs to write and test rules themselves, eliminating miscommunication and allowing for earlier testing and diagnosing of any problems. In addition, if changes need to be made, because the decisions have been abstracted and centralized, they only need to be made in one place.

This has the added advantage of freeing up technical resources to focus on other aspects of a digital transformation project. In fact, in the 2021 InRule User Community (IUC) survey, users reported that, prior to implementing a decision platform, they spent an average of 120-160 hours making changes to decision logic that had been hard-coded into applications. After implementing InRule, this shrunk to roughly 14 hours. (Learn more about the *Value of InRule*.)

In the era of big data, having information isn't the problem. For many, **operationalizing data from disparate sources** continues to confound organizations who know that transforming information into insight is

the key to delivering the type of personalized, in-context experiences their markets demand.

With the InRule Decision Platform, there are multiple ways to connect disparate data sources to business logic without doubling maintenance effort. Developers can import data structures and relationships, ensuring that what authors are working with mirrors existing architectures. And with the authoring extension for CRM applications, irX™, companies can connect data structures to the entities and fields from Microsoft Dynamics® or Salesforce®. For more information, consult *Patterns and Practices: Schema Importing and Binding*.

These capabilities ensure your automated decisions can use the same data you're using to run your business — and that means changes made in your data model are reflected in the decision platform.

However, sometimes the name from an external data source doesn't clearly define what it represents. For example, in one system "physician" may simply define a role. In another, it may mean primary care provider. Knowing and documenting these differences in definition is key to formulating a rule that uses the entity in the appropriate context.

InRule allows users to remove this type of ambiguity by assigning an alias to an imported entity. This lets an author accurately use the item without having to continually refer to an external definition of the term. This feature also assists in the review process and establishes which meaning of an entity is appropriate to use in each rule.

DECISION AUTOMATION SHOULD SIMPLIFY, NOT COMPLICATE

With our manufacturing example, the transition to automation meant that the know-how of changing a work procedure moved from collective knowledge (and plain language) to control code only a robot (and an operations engineer) could understand.

However, with decision automation, the goal is the opposite: enabling complex technical operations using simple, plain language wherever possible.

When we talk about authoring rules, we're considering all of the elements that go into translating a business rule into something that can be executed digitally. There are several ways to do this, and the better decision platforms provide multiple methods to author, meeting subject matter experts and developers where they are on their decision automation journey.

For example, writing rules using **business language** enables subject matter experts to write and review rules in **plain language rather than code**. With InRule's authoring products, users can express rules naturally, regardless of complexity. The intuitive interface simplifies writing, reviewing, and keeping rules consistent with changes in policy or the needs of the marketplace.

InRule also improves ease of use within a digital decisioning platform. It does this through several features and functions, one of which is Points of Interest (POI). A GPS for your rule application, this feature gives you the ability to traverse even the most complex decision logic with ease. It offers visibility into not only dependencies, but all related entities, rules, inputs, and more — providing a picture of any element's relationship to the whole and a holistic view of the automated decision.

From business language outside of code, to multiple authors, central logic location, and Points of Interest, digital decisioning platforms can help simplify your digitization and, in turn, accelerate transformation.

USING VOCABULARY TO REMOVE AMBIGUITY

As discussed earlier, there are countless stakeholders involved in the decisions that make businesses run. We explored how every industry, organization, and even department has their own language – a way of speaking about their policies that may be wholly unique to them. Building automated decisions in the **language of daily work life** is central to ensuring broad cross-functional adoption and long-term success.

This is why InRule developed our unique vocabulary feature. Users can create plain-language phrases which represent out of the box (OOTB) expressions, complicated code-like user-defined functions, or even extensive mathematical equations – or any combination. These phrases, or vocabulary, can be saved and reused throughout a rule application ensuring domain specificity and improving readability.

Say an application needs to find and apply tax, based on item type and zip code of a restaurant location, to an order. With vocabulary, this...

```
IF {
}       (IsPlaceforEating = True) and isnotnullorempty(TableLookup(ZIPCode-
        Table, "ZIPCode", "ZIPCode", ZIPCode, null));


THEN {
}       Set order.ZIPTax = Percent(order.OrderTotal, 1)


IF
        the order is in a restaurant
        and the restaurant is in the Chicago MPEA area
THEN
        set zip code tax to 1 % of the order total
```

MAKING DEPENDENCIES DEPENDABLE

As we said earlier, translating experience and stakeholder know-how into digital decisions can be messy – but wholly worth it. In fact, in a recent Forrester study, "Operating a Customer-Obsessed Enterprise", they found that companies with disruptive, customer-focused tech strategies **outperform their industries by 300-400%.**

Often, a situation can have multiple dependencies to consider before an appropriate outcome can be determined. However, when done in code, the result becomes byzantine and untenable to update with any frequency.

Enter the decision table, another way authors can create readable, transparent rules in the InRule Decision Platform. A decision table is easy to manage and share among stakeholders, and its format is intuitive for non-technical authors familiar with spreadsheets. Decision tables help authors define and maintain large quantities of rules in a compact format that is easy to visualize and work with.

For example, suppose part of an organization's digital transformation initiative is to automate much of the initial intake process at an urgent care facility, while still prioritizing accurate triage of patients. Based on responses during a self-guided admissions questionnaire, the application identifies patient discomfort and the risk of delay as two determining factors for who is seen first. The associated decision table would look like this:
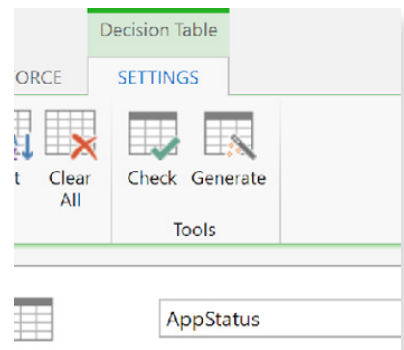
The rule engine evaluates conditions from top to bottom until it finds conditions that match, then executes the appropriate action. With its built-in decision table generator, the InRule Decision Platform makes it possible to detect combinations of conditions that would otherwise not have been considered. Users can identify logic conflicts or gaps in decision tables of any size with a single click. As conditions are mapped out, dependencies become much clearer and organizations often realize that some requirements are redundant.

CONDITIONS		ACTIONS
Patient Discomfort	**Risk of Delay**	**Treatment Priority**
Low	Low	Low
Medium	Low	Low
High	Low	Medium
Low	Medium	Medium
Medium	Medium	High
High	Medium	High
Low	High	High
Medium	High	High
High	High	High
Any	Critical	Immediate

TESTING, TESTING

So far, we've seen that the earlier an enterprise can put decision automation at the center of their digital transformation, the sooner they remove barriers to success, including:

- Technical resources tied up in maintaining hard-coded business logic in disparate applications depleting availability for higher impact deliverables

- Cost and delay that comes with miscommunication while translating requirements between functional groups

- Un-operationalized data from multiple sources that could be leveraged to create entirely new business structures or customer engagement models

We also learned how decision automation enables the consistent execution of business logic throughout organizations while making it more understandable and easier for business users to maintain. Decision automation centralizes know-how into a "single source of truth" on which the business operates.

Because decisioning is central to successful digital transformation, freeing up technical resources for higher-impact deliverables shouldn't come at the cost of testing. Testing to validate that rules are working as stakeholders expect is crucial.

InRule's Decision Platform has an integrated testing facility to handle this. irVerify allows users to test, understand, and fix issues without leaving the InRule environment. Having integrated testing saves the time and effort needed to manage a separate environment. It also means that the team won't have to move back and forth to test, revise, and retest, simplifying the digital decision development process.

Basic testing runs a single record through the rule application, which allows an author to test with known data as they write rules, all without leaving the environment. Authors can run a test session, change business logic, and run another session to do A/B testing of potential changes and see how they may impact business.

Regression testing enables an author to select multiple records and test them across various cases. Performing regression tests protects organizations from rule changes having unintended impacts upstream or down. It allows users to select or create test data and store locally as test rule sets. In addition to checking if rules are executing correctly, users can also create test suites that include other test types, like assertion, comparison, and performance tests.

Rule tracing allows users to run tests and evaluate the results. With its intuitive, breadcrumb-like clickable interface, authors easily see which rules ran and in what order, along with what the conditions for each decision were and the outcome. The result is a highly transparent aid, easily interpreted by business and technical users alike.

WRAPPING UP

Putting decision automation at the center of digital transformation projects as early as possible is the secret to success.

Companies who successfully leap the automation chasm deliver exceptional results:

- Transforming mortgage pre-approval cycle times from days into hours.

- Developing a personalized, self-service portal that includes real-time benefits calculations and retirement scenario modeling.

- Reducing data cleanse efforts by as much as 96%.

- Powering voter eligibility determinations, in real time, across 18 million voter records.

- Recovering millions in lost revenue due to improper payments, fraudulent claims, and slow claim processing times.

But unlike manufacturing automation, the complexity of automating decisions is not in the technologies employed. In fact, if done well, it's quite the opposite. The nuance and complexity is in the decisions themselves and the dependencies on which they operate.

When selecting a decision platform to express these complexities, we discussed what users should consider:

- How decision logic will be authored

- Ease of use features like business language

- Vocabulary and points of interest

How business users can test to make sure the decision logic executes properly, freeing up technical resources to focus on other aspects of digital transformation projects

Once stakeholders identify, understand, articulate, and establish the decisions and desired outcomes for their digital transformation project, centralized business logic can be called upon by nearly every area of an enterprise to deliver in-context consistent decisions that drive better business outcomes.

In the second part of our series, we will discuss how businesses are spanning the next chasm in their automation journey – turning decisions into insights by leveraging machine learning and metrics. We'll also explore how decision platforms integrate with business process systems and deploy to cloud and mobile for decisioning anywhere.

For more information on InRule or to request a demo, visit *www.inrule.com*

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