

# Progress Corticon BRMS

## Understanding Business Rules and How to Use Them

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Progress Software

Founder and Former CEO, Corticon Technologies

**PROGRESS**  
**EXCHANGE** 2014

# Agenda

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- Introduction to Business Rules Management
  - What Is Business Rules Management?
  - The Business Rules Management Problem
  - The Corticon Solution
- Corticon Customer Success
- Corticon Differentiation
- Corticon Demo
- Corticon and OpenEdge
- Summary & Q&A

# What Is Corticon Business Rules Management?

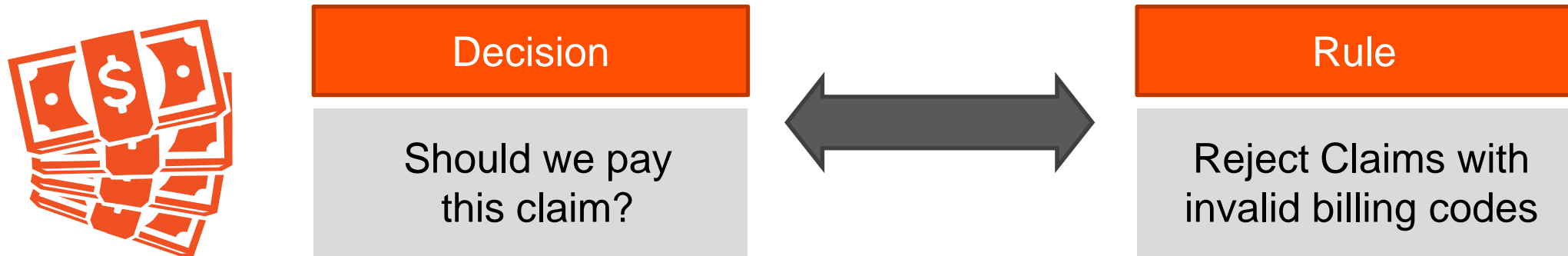
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## Software to Help Make the **Right Decision** at the **Right Time** With **Business Agility**

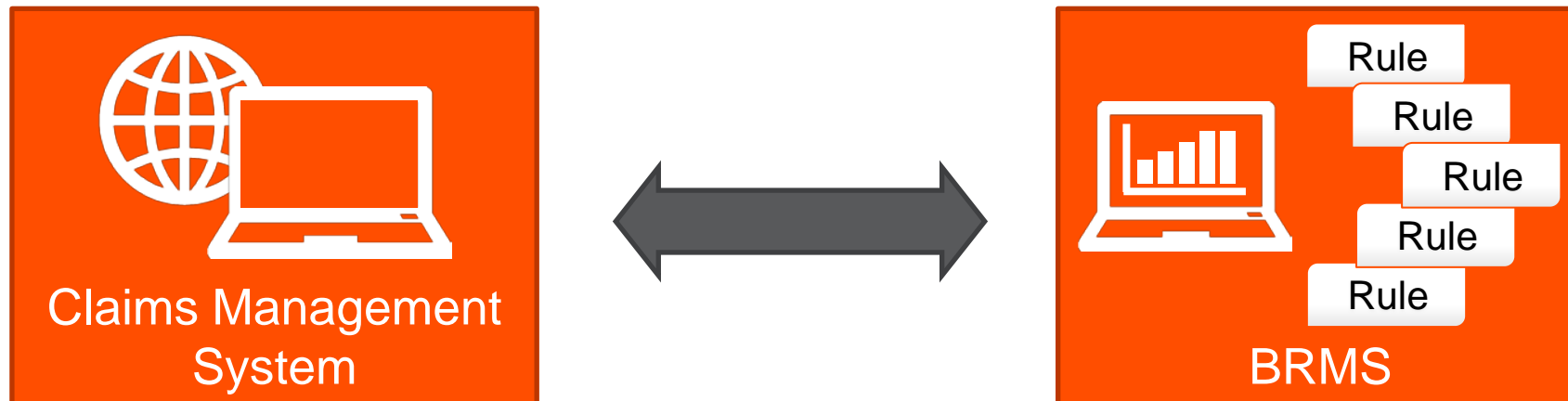
	Should we pay this claim?
	What offer should we make, now?
	What resource should we allocate?

# What Is Business Rules Management?

- Decisions are governed by business rules



- BRMS – Business Rules Management Systems** (a.k.a. **rule engines**) externalize decision logic from applications and represent as business rules



# The Problem: Automating Business Rules

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## Traditional approach is programming-based

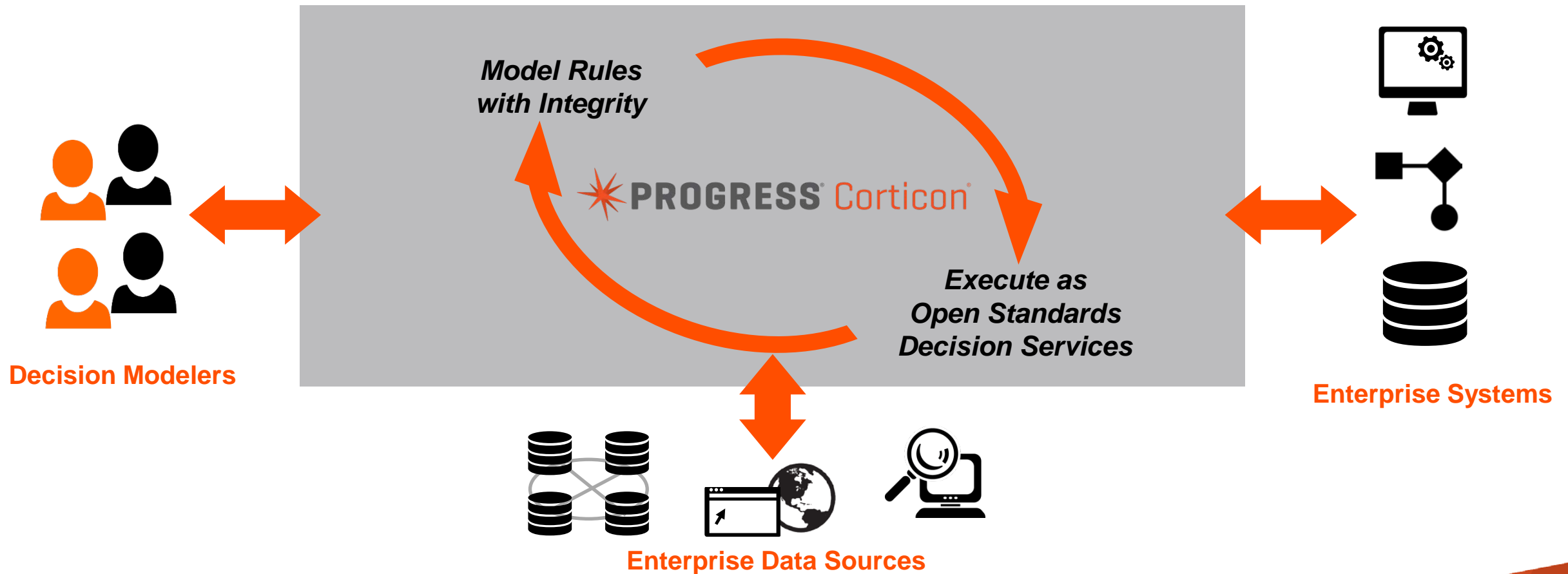
- Simple rules difficult to automate, sophisticated ones impossible
- Single change can impact hundreds of rules/processes



**There is a better way...**

# The Solution: Progress Corticon Business Rules Management System

- Separate decision logic from code
- Empower business users
- Ensure performance & scalability
- Enable fast, safe changes



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# Progress Corticon: 500+ Customers

Insurance	Financial Services	Government	Health and Human Services	eCommerce
   	   	 FBI  OPM  DIA  State Department	   	   



# Progress Corticon: Key Use Cases

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 Commerce (Sales & Marketing)	Apply – Price/Quote – Recommend – Police
 Customer Servicing	Intake – Validate – Adjudicate – Recover – Fraud
 Manufacturing & Supply Chain	Production Planning – Resource Allocation – Logistics
 Enterprise Rules Management	Decision Analytics as a Business & IT Discipline

# Corticon Case Study: Online Insurance Sales

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Powered By Corticon  
Business Rules Management System (BRMS)



precedent | REMIX contact | logout

1 apply | 2 choose a plan | 3 purchase | 4 accept | 5 last step

**Choose A Plan**

We are pleased to offer you these plans. The prices quoted will be locked in for 30 days from the date of the quote. If you have a promotion code, enter it now to get your discount.

If you have any questions or need any further assistance, please call 1-8-PRECEDENT (1-877-323-3368).

[Click "Calculate" for your discount.](#)

**Tempo**

Deductible: none

Medical Costs: We Pay 60%

Prescription Costs: We Pay 60%

Activate Additional Coverage: After We Pay \$ 1,000 In Network Benefits

Monthly Premium	Amendments*
\$101.72	
Benefits At A Glance <a href="#">View</a>	Plan Details <a href="#">View</a>

[play](#) [read](#)

**Rhythm**

Deductible: \$250

Medical Costs: We Pay 70%

Prescription Costs:

Monthly Premium	Amendments*
\$102.30	
Benefits At A Glance <a href="#">View</a>	Plan Details <a href="#">View</a>

# Instant Underwriting

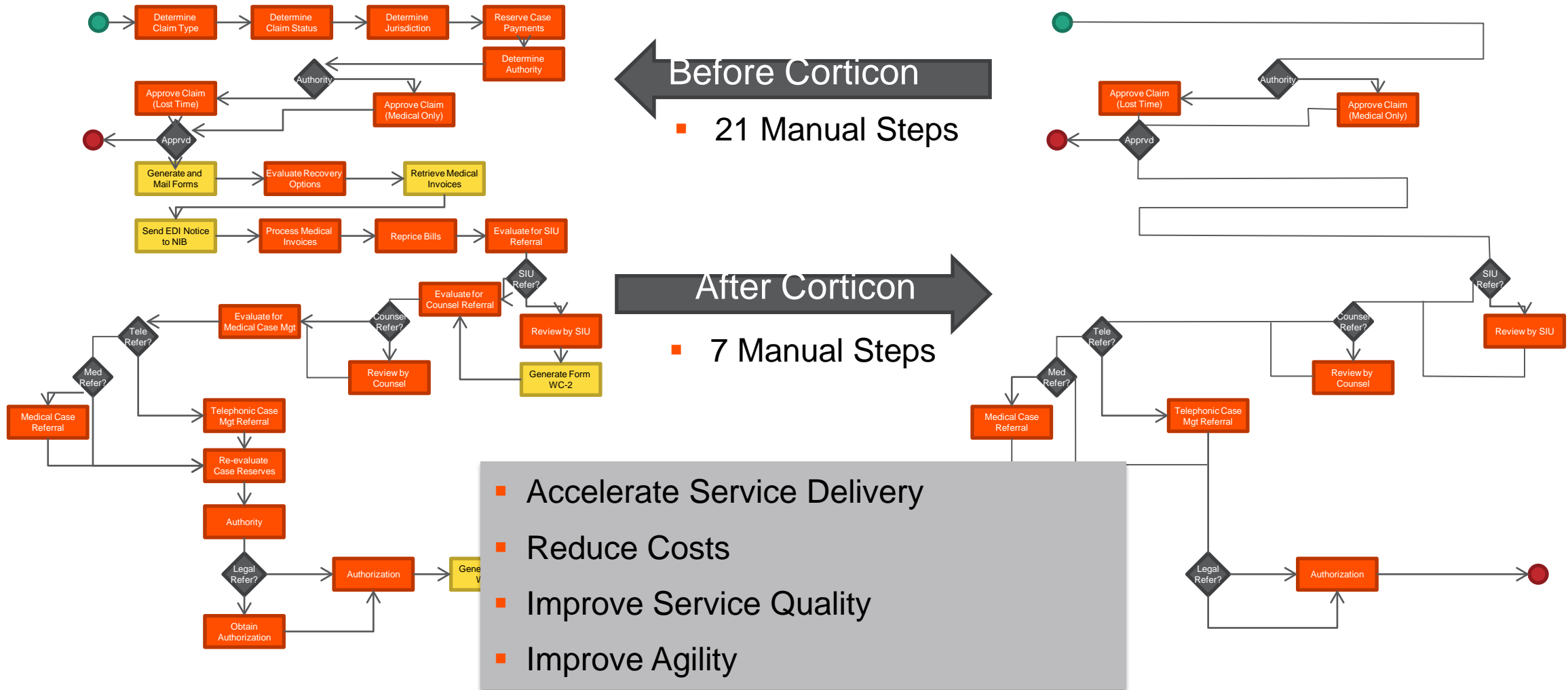
This page presents the full offer

- Final rates
- Customized plan selection
- Plan amendments based on health conditions
- All quote data on this page was stored by the Rules engine

- Grow revenues thru new sales channel
- Streamline process from days to minutes
- Rapidly respond to changes in market direction



# Corticon Case Study: Claims Processing





## CHALLENGE

- With more than 250 million transactions per day, eBay required a millisecond response from a rule service to ensure a responsive customer experience

## SOLUTION

- **Progress Corticon's** rules engine could rapidly stand up to eBay's demanding production needs

## BENEFIT

- Increased performance, scalability, accuracy, integrity and agility



## CHALLENGE

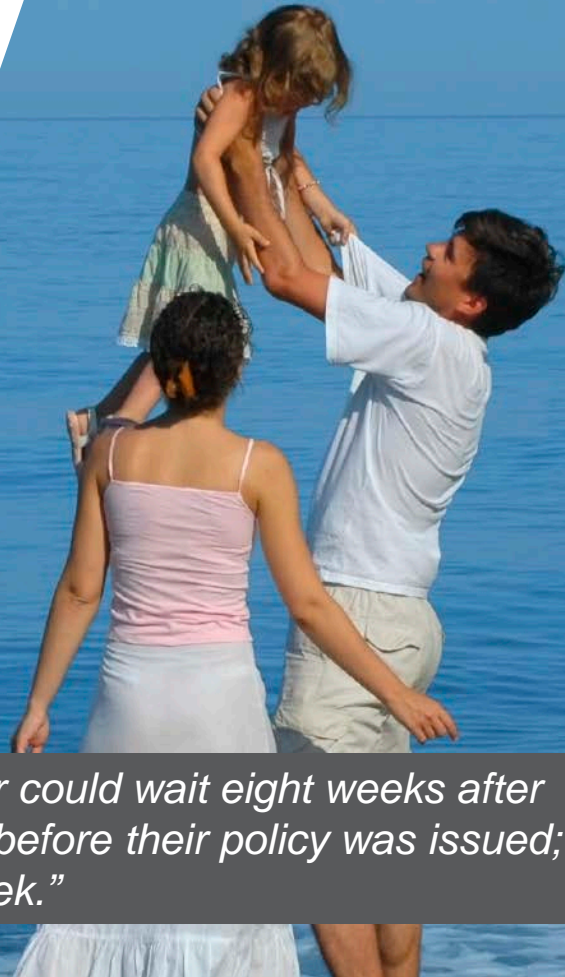
- Provide a seamless mobile phone shopping experience for users in store and online

## SOLUTION

- **Progress Corticon** is the decision logic behind the smartphone sales and activation kiosks located in Wal-Mart and Sam's Club stores.

## BENEFITS

- Allows Wal-Mart to increase its presence in multi-billion smartphone retail market.
- Improves the activation process by providing quicker service and exclusive offerings.
- Corticon decision modeling provides customers the best plan to meet their distinctive needs.



*“Before Corticon, a customer could wait eight weeks after a price quote was accepted before their policy was issued; now it takes as little as a week.”*

*“Changes that would have taken weeks can be made in days even including all the necessary IT governance and controls. And changes are made with **accuracy and confidence** now, thanks to the model-driven approach and rule verification built into Corticon.”*

## CHALLENGE

- Unum, a market leader in disability, group life, long-term care and voluntary benefits, needed to reduce time-to-market for new products and business rules changes

## SOLUTION

- **Progress Corticon** Business Rules Management System

## BENEFIT

- Faster implementation and business change cycles
- Faster price quotes—from 8 weeks to as little as one week
- Better customer service
- Unprecedented agility and business control
- Strong ROI



## CHALLENGE

- One of the largest banks in Asia needed better ways to manage credit risk.

## SOLUTION

- Credit scoring models build in Progress Corticon BRMS

## BENEFIT

- Better credit models reduce risk and required reserves
- Improved speed to deliver new credit scoring models (and update)
- Reduced errors in models
- Reuse logic across multiple models
- Easy to use, deploy and manage



## CHALLENGE

- Harness the potential of automated decision management to provide **customized** credit ratings to government agencies, banks and retailers covering over **9M** registered Dutch citizens.

## SOLUTION

- BKR will use Corticon to automate the business rules associated with credit ratings based on multiple data sources to enable tailored service offerings, improve speed to market and boost customer satisfaction and retention.

## BENEFITS

- Help organizations like banks and retailers to assess an individual's credit worthiness to minimize fraud and credit risk.

## CHALLENGE

- Meridian Health Plan needed to expand healthcare claims processing business into new states and keep up with changing regulations as HIPPA and the Affordable Care Act (“Obamacare”)

## SOLUTION

- Use **Progress Corticon** BRMS to modernize existing OpenEdge architecture

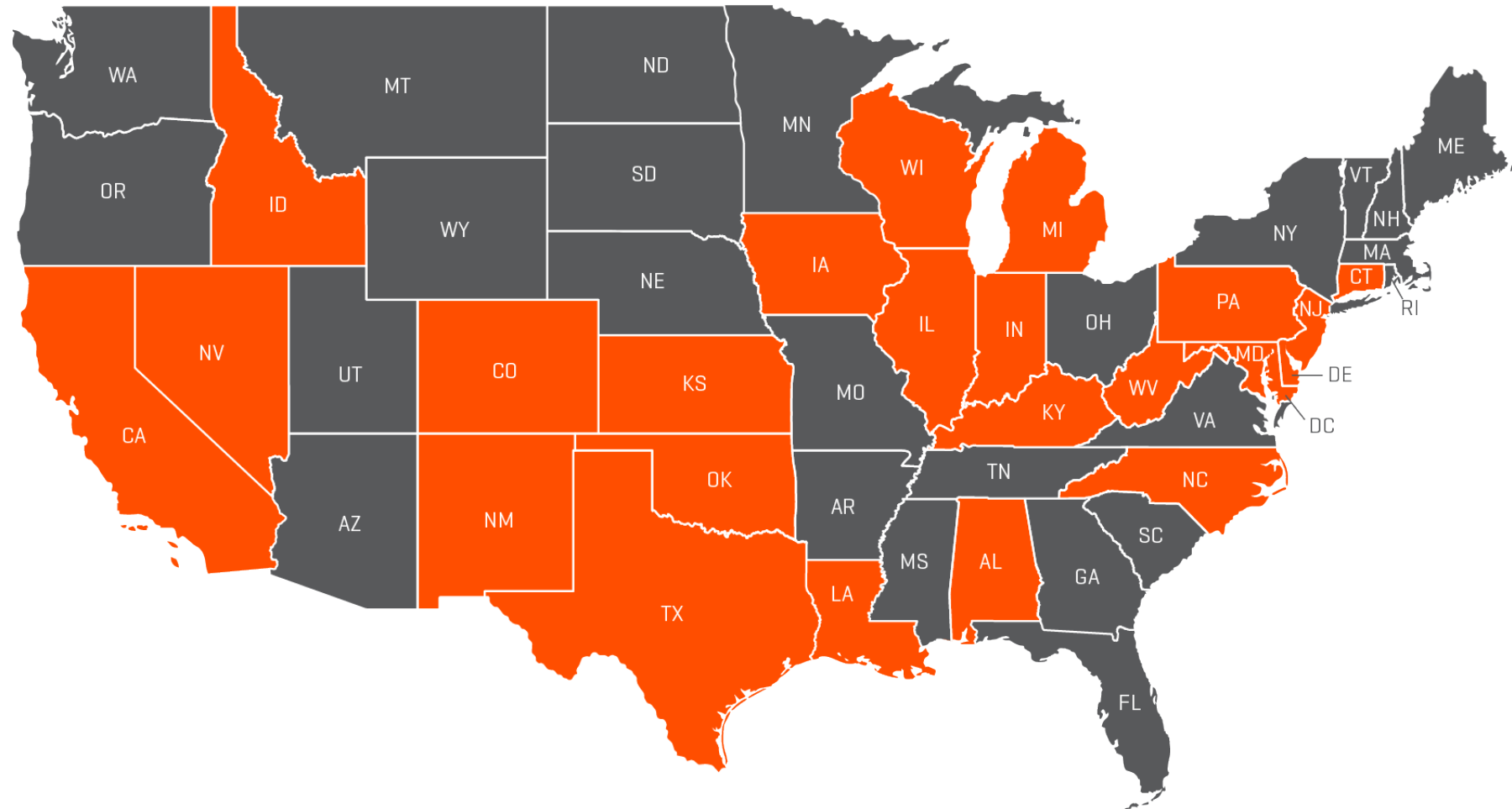
## BENEFIT

- Empower healthcare domain expert to manage volatile decision rules outside of the OpenEdge ABL
- Accelerate application customization covering the needs of each customer as well as state/local regulatory schemes

# U.S. States Using Progress Corticon

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23 U.S. states (46%)  
have chosen Progress  
Corticon as their  
business rules  
solution (HHS,  
pensions, DMV, etc.)



## CHALLENGE

- Romanian Government Healthcare Service combatting prescription fraud and reducing medical errors.

## SOLUTION

- Use **Progress Corticon** BRMS to build electronic prescription system

## BENEFIT

- Ability to process high volumes of transactions (scalability)
- Ease of development – rules integrity
- Seamless integration with the National Health Insurance Fund existing BPM system



**Macintosh**  
Retail Group



## CHALLENGE

- Deliver a cross-channel strategy to enable a seamless customer experience

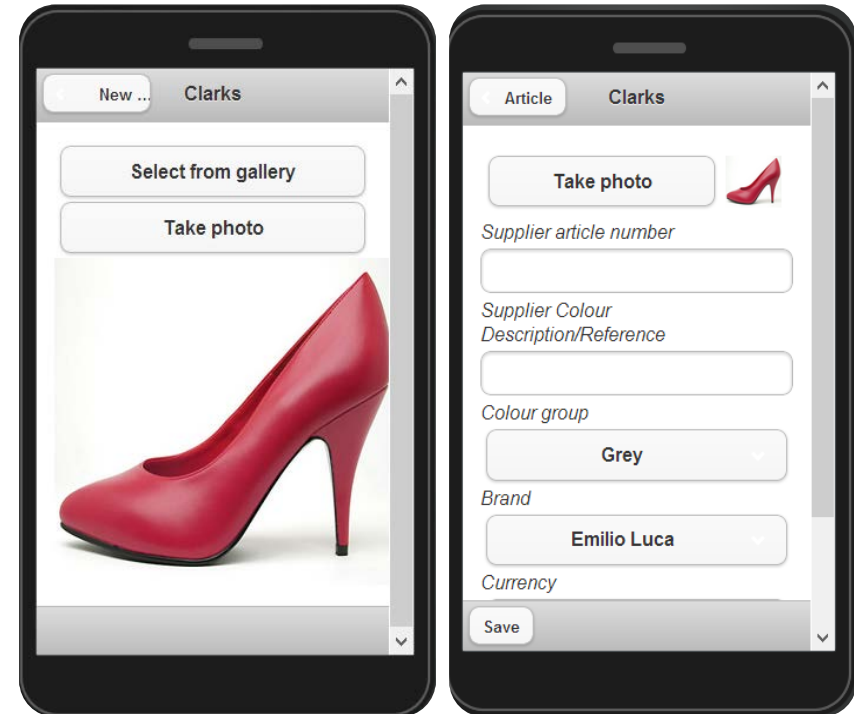
## SOLUTION

- Create custom made ERP system with the **Progress Pacific** platform: **Progress Rollbase, Progress OpenEdge 11.3, Progress OpenEdge Mobile, Progress OpenEdge BPM, Progress Corticon**

## BENEFITS

- Flexibility & agility to capitalize on opportunities faster than competition
- Enable consumers to easily move between online and offline channels to optimize the shopping experience
- Ensure superior customer service with access to real-time product and customer information

# Capturing New Selling Opportunities



Find new products locally (i.e. Asia)

Capture only high level details at the source



# Completing the Product Details in the Back Office

Back

Generate Variant Generate Graph

**Article Info**

Supp Ref	CLJN	CategoryValue	Footwear	BrandValue	
SuppCol	YLW	GenderValue	Ladies	ColourGroupValue	
Image		ModelValue	Safety Boot	SeasonValue	
				CurrencyValue	

Attribuut Beschrijving Kosten Leverancier **Materiaal** Variant Verwijzing

**Bovenste**

Bovenmateriaal Group	Leer
Upper Genre	Hard rubber
Bovenmateriaal	KL-101

**Zool**

Sole Materiaal Group	Rubber
Sole Genre	Kunststoffen
Sole Materiaal	SOPO-14-3
Fastener	-- Please select --
Imitatiebont	<input checked="" type="checkbox"/>

**Binnenzool**

Binnenzool Materiaal Group	Natuurlijke vezels
Binnenzool Genre	Kunstleer
Binnenzool Materiaal	Katoen

**Voering**

Voering Materiaal	Angora
Voering Materiaal Group	Synthetisch
Voering Genre	Synthetisch textiel

-- Please select --  
Acetaat  
Acrylics  
Angora  
Aniline  
Genakor 023  
Gepigmenteerde  
KL-101  
**Katoen**  
Mohair  
Nylon  
Poly-soft S40  
Poly-soft s70  
Polyesters  
Polyethyleen  
Polystyreen  
SOPO-14-3  
SOPO-14-6  
Scrplycs

Task sourcing assistants to complete the product details

Automatically create all required product attributes based on rules (different for all products)

# Rules Driving the Front End Experience



The screenshot shows the Corticon Designer interface with a rule configuration table. The table is titled 'getGenderRelatedData.ers' and has columns for conditions and five categories (0-5). The conditions are:

- a) CategoryValue.ValueCharacter.toLower
- b) GenderValue.ValueCharacter.toLower
- c) ListModel.ValueCharacter.toLower

The categories contain lists of product types, such as 'footwear', 'clothing', and various shoe styles like 'sling back sandal', 'party sandal', 'roller blades', etc. An orange callout box points to the table with the text: "Create specific product details (attributes) based on apparel category, gender, product type, etc..".

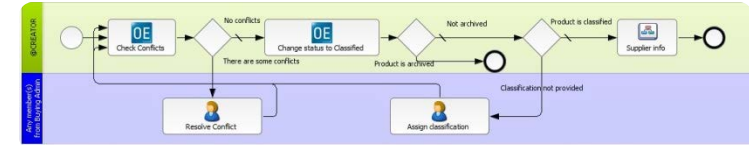


# Bringing It All Together



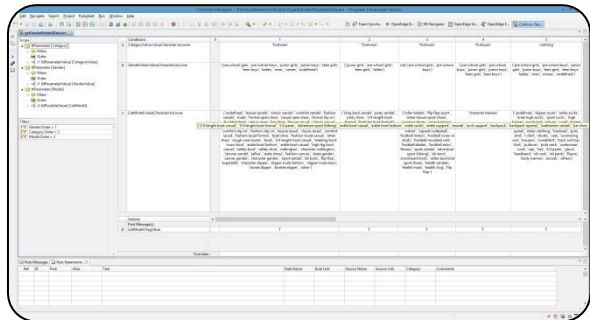
## PROGRESS Rollbase MOBILE

Find and capture products locally



## PROGRESS OpenEdge BPM

Create, validate and assign tasks internally to complement product sourcing details



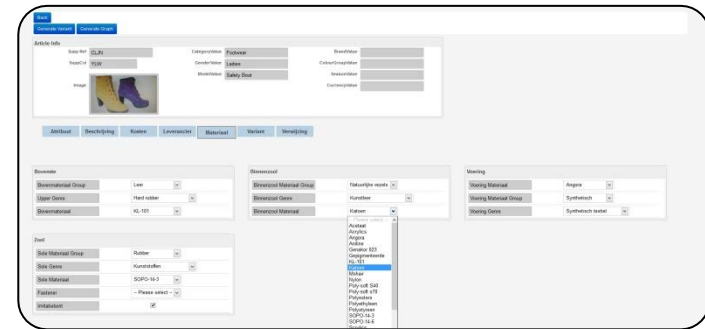
## PROGRESS Corticon

Dynamically create all relevant product details based on many criteria (rules)

```
// VAR vcServer AS CHAR OMIT "127.0.0.1" //your hostname!
// Our Schema Definition for our
// Dataset.
DEF TEMP-TABLE tt NO-UNDO
  FIELD ttCustomerNo AS CHAR
  FIELD ttCustomerName AS CHAR
  FIELD ttAddress1 AS CHAR
  FIELD ttAddress2 AS CHAR
  FIELD ttPostCode AS CHAR
  FIELD ttState AS CHAR
  FIELD ttCountry AS CHAR.
// Define DataSet for Schema
DEFINITE DATASET getCustomerData FOR tt.
//execute procedures*/
RUN p-getData.
RUN p-viewCustomers.
PROCEDURE p-viewCustomers:
//Procedure: p-viewCustomers
//Purpose : View Data retrieved from WSDL.
//*****
FOR EACH tt NO-LOCK
  DISPLAY tt WITH WIDTH 200.
END.
END
SERIAL #F BEGIN BEGIN END
END #FCH #F NO-LOCK
```

## PROGRESS OpenEdge

Seamless integration



## PROGRESS Rollbase

Complete product profile in back-end system with product specific details



## CHALLENGE

- With **21M** item references and **600K** stock items and **20K** customers and **thousands** of suppliers across more than **170** countries, the rules that manage pricing as well as the bonuses tied to sales can be highly complex

## SOLUTION

- TVH will use Corticon to automate the business rules associated with price calculations and bonuses to improve accuracy, productivity and customer satisfaction.

## BENEFITS

- Increased performance, scalability, accuracy, integrity and agility

The logo for DMSI, featuring a stylized 'D' with a red and white arrow-like shape on its left side, followed by the letters 'MSI' in a bold, dark grey sans-serif font. The logo is positioned in the top left corner of the image, set against a white background that tapers into the scene.

**DMSI**





(48.9%)

118

2,373

31

1,758

2.0

149

Retention

Acquire

CRM

Service

Sales



# Agenda

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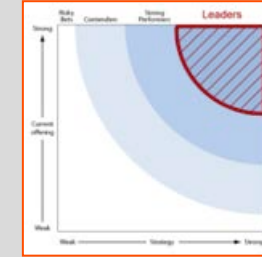
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# Progress Corticon BRMS: Recognized Market “Leader”

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Corticon has **breakthrough** tools for business analysts



Corticon positioned as **Leading Innovator** in Gartner Magic Quadrant



Corticon has developed **breakthrough** technology in the BRMS market

# Corticon Differentiation

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- Model-driven Development
  - Automate rules without coding
- Guaranteed Rules Integrity
  - Ensure safe changes
- DeTI engine
  - Market-best performance and scalability



# Model-Driven Rules Development

- Out-of-the-box ready for use by
  - Business Analysts
  - IT Professionals
- Patented Excel-like modeling tool
  - No programming
  - Business friendly
- One-click deployment

The screenshot displays the Rule Development tool interface. On the left, a 'diabetes\_voc' vocabulary tree lists various business objects like 'Patient', 'age', 'blood\_pressure', etc. The main area shows a 'Conditions' table and an 'Actions' table. A 'Rule Statements' table at the bottom provides natural language descriptions for each rule.

Conditions	1	2	3	4	5
a Patient.risk	'high'	'low'	-		
b Patient.recommendation	'treat immediately'	'observe'	-		
c Patient.a1_diagnosis_test	-	-	T		
d Patient.blood_pressure	-	-	> 130		
e Patient.cholesterol_level	-	-	> 5		

Actions	1	2	3	4	5
A Patient.treatment_plan	'low dosage thizide diuretics'	'low dosage beta blockers'	'immediate hospitalisation'		

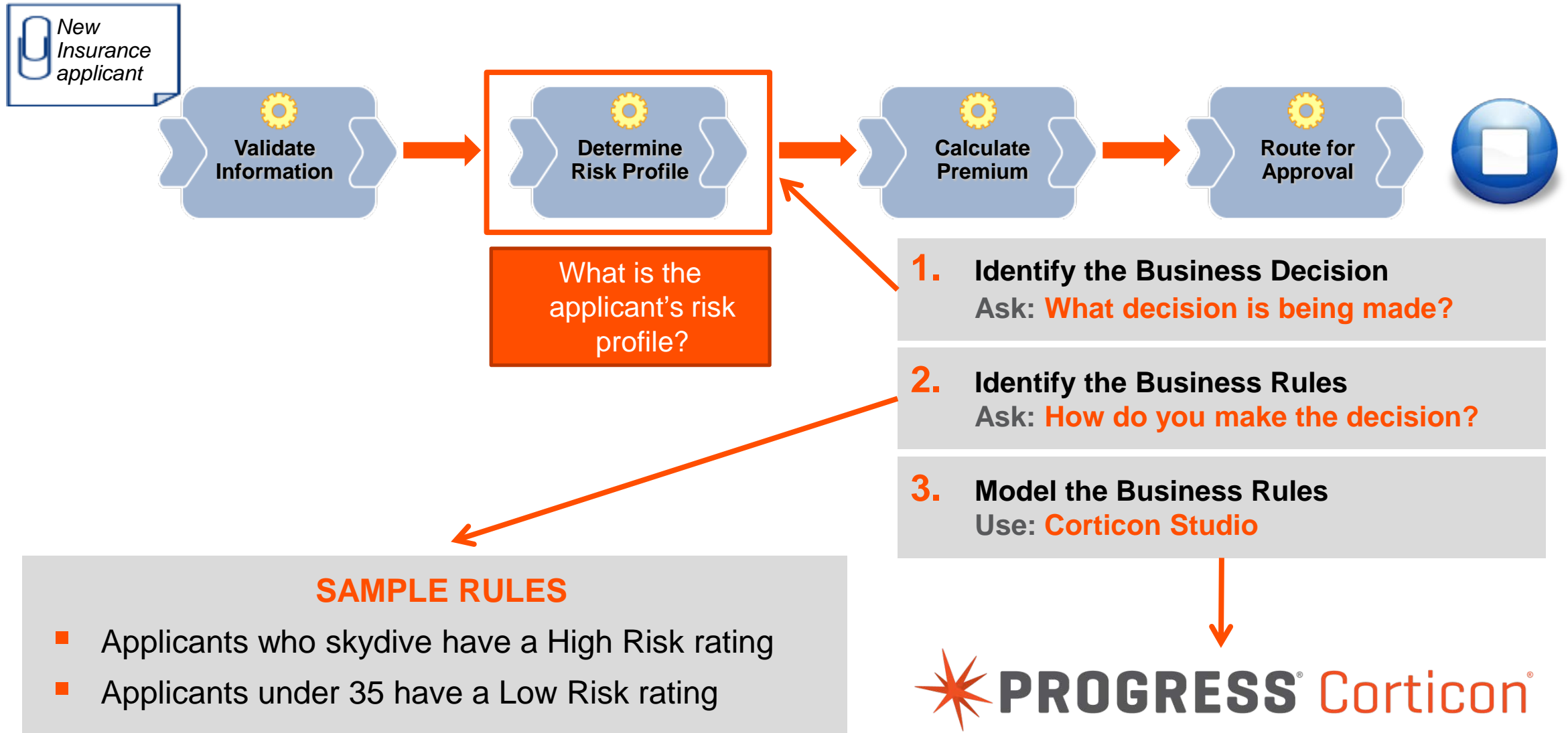
Alias	Text
Patient	A low dosage of thizide diuretics is required for a patient who is high risk and who needs to be treated immediately.
Patient	A low dosage of beta blockers is required for a patient who is low risk and who needs to be reevaluated over the next two weeks.
Patient	Patient needs to be hospitalised immediately if diagnosis test A1 is positive, blood pressure is over 130 and cholesterol level exceeds 5.

Annotations:

- Rules are constructed with drag-and-drop ease
- Vocabulary consists of your business objects/terms
- Rule Statements provide rule documentation and traceability
- Comprehensive, extensible library of operators (akin to Excel functions)

**Proven with the most sophisticated business problems**

# Corticon Studio Demonstration



# OpenEdge Coding: 35 Lines of Code for 4 Business Rules

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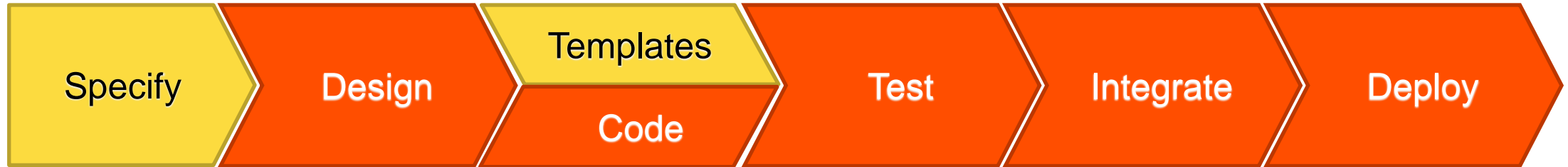
```
DEFINE INPUT PARAMETER isSkyDiver AS LOGICAL NO-UNDO.
DEFINE INPUT PARAMETER applicantAge AS INTEGER NO-UNDO.
DEFINE INPUT PARAMETER parmCurrency AS CHARACTER NO-UNDO.
DEFINE INPUT PARAMETER parmAge AS INTEGER NO-UNDO.
DEFINE INPUT PARAMETER parmIncome AS INTEGER NO-UNDO.
DEFINE OUTPUT PARAMETER ruleStatement AS CHARACTER NO-UNDO.

DEFINE VARIABLE riskRating AS CHARACTER NO-UNDO.
DEFINE VARIABLE totalPremium AS DECIMAL NO-UNDO.

IF isSkyDiver THEN
DO:
    ruleStatement = "Warning" + CHR(1) + "Applicants who skydive have a high risk rating regardless age." .
    riskRating = "High".
    totalPremium = 150.
    ruleStatement = ruleStatement + CHR(3) + "Info" + CHR(1) + "Applicants who are " + riskRating + " risk pay a premium of " + parmCurrency + STRING(totalPremium) + ".".
    RETURN.
END.
ELSE
DO:
    IF applicantAge < parmAge THEN
    DO:
        ruleStatement = "Info" + CHR(1) + "Applicants less than " + STRING(parmAge) + " years of age have a low risk rating." .
        riskRating = "Low" .
        totalPremium = 50.
        ruleStatement = ruleStatement + CHR(3) + "Info" + CHR(1) + "Applicants who are " + riskRating + " risk pay a premium of " + parmCurrency + STRING(totalPremium) + ".".
        RETURN.
    END.
    ELSE
    DO:
        ruleStatement = "Info" + CHR(1) + "Applicants who are " + STRING(parmAge) + " year or older and don't skydive are medium risk." .
        riskRating = "Medium" .
        totalPremium = 100.
        ruleStatement = ruleStatement + CHR(3) + "Info" + CHR(1) + "Applicants who are " + riskRating + " risk pay a premium of " + parmCurrency +
            STRING(totalPremium) + ".".
        RETURN.
    END.
END.
END.
```

# Model-Driven Rules Development

**Traditional Approach** Often contains errors and performance issues



*Reduce development  
and change cycles by 90%*



**Progress Corticon Approach**

Higher quality, higher performance, agility

 Requires Technical Resource

# Benefits of Model-Driven Rules Management

Sample ROI Analysis\* – Automation of single, decision-making task

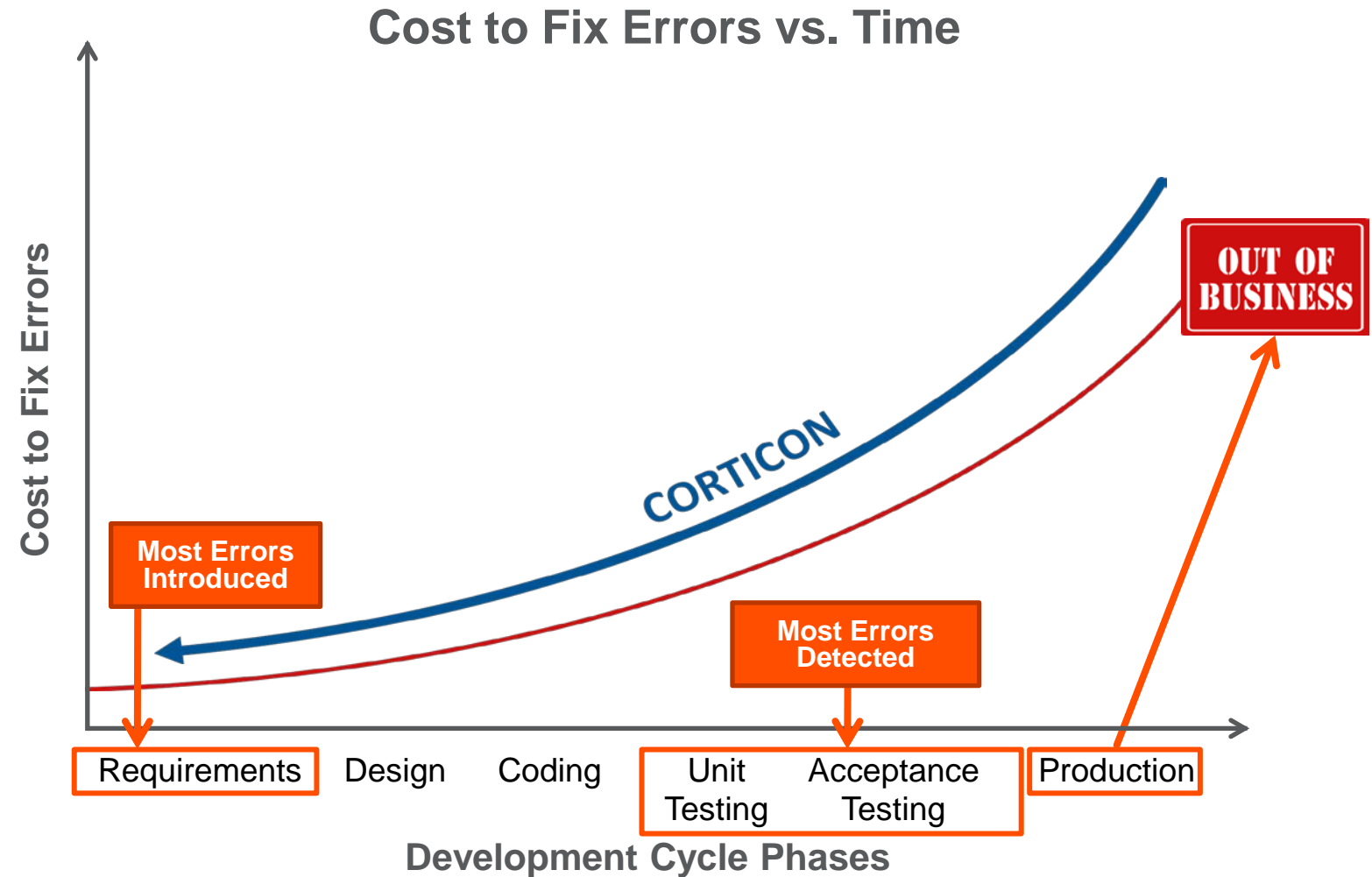
	1 <sup>st</sup> Generation	Corticon	
<b>Initial Development</b>			
Analyze	20 hours	20 hours	
Prepare – Design	5 hours	N/A	
Prepare – Implement	200 hours	2 hours	
<b>Total</b>	<b>225 hours</b>	<b>22 hours</b>	<b>10x Improvement</b>
<b>Change Cycle</b>			
Analyze	15 hours	0.5 hours	
Prepare – Design	7 hours	N/A	
Prepare – Implement	28 hours	1.5 hours	
<b>Total</b>	<b>50 hours</b>	<b>2 hours</b>	<b>25x Improvement</b>



\*Per NCAA customer testimonial. See webinar: [Extreme Agility: Achieving 25x Acceleration in Business Cycles with Model-Driven Business Rules Management](#)

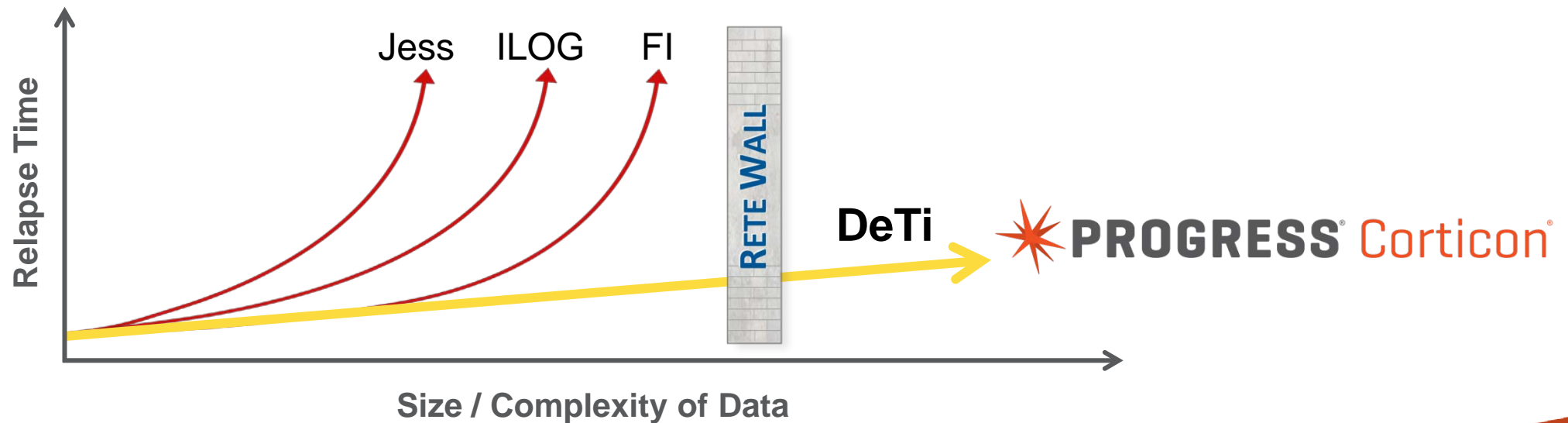
# Guaranteed Rules Integrity

- Debugging rules is a major issue with traditional rule development
- Corticon identifies logical errors during requirements specification



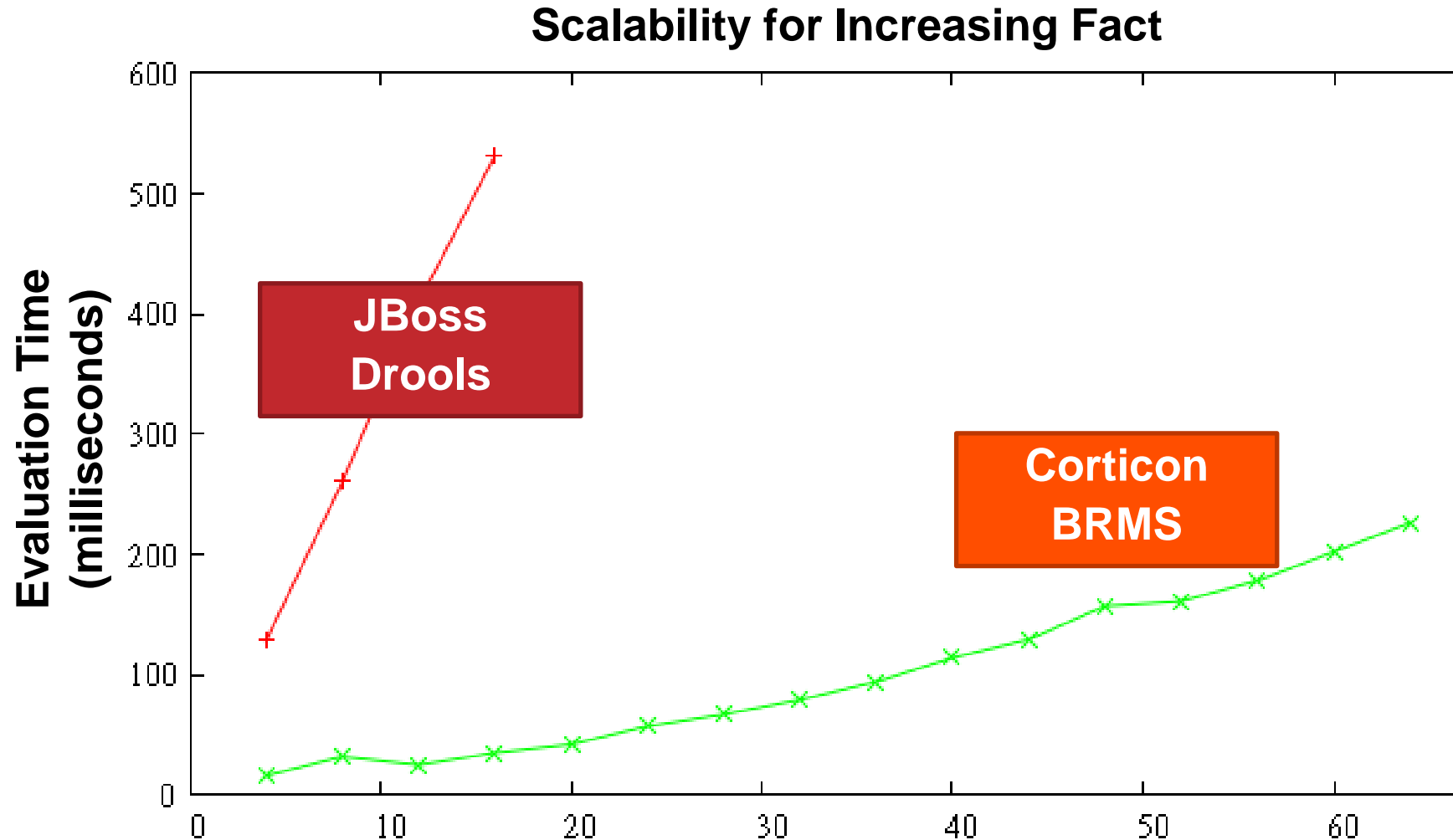
# Performance & Scalability

- Traditional pattern matching algorithm is Rete
  - Scales well with increasing number of rules
  - Degrades exponentially with increasing complexity of data – the “Rete Wall”
- Corticon’s patented DeTi (Design Time) algorithm
  - Scales linearly with number of rules and complexity of data



# Corticon vs. Drools

## Progress' Performance & Scalability Tests



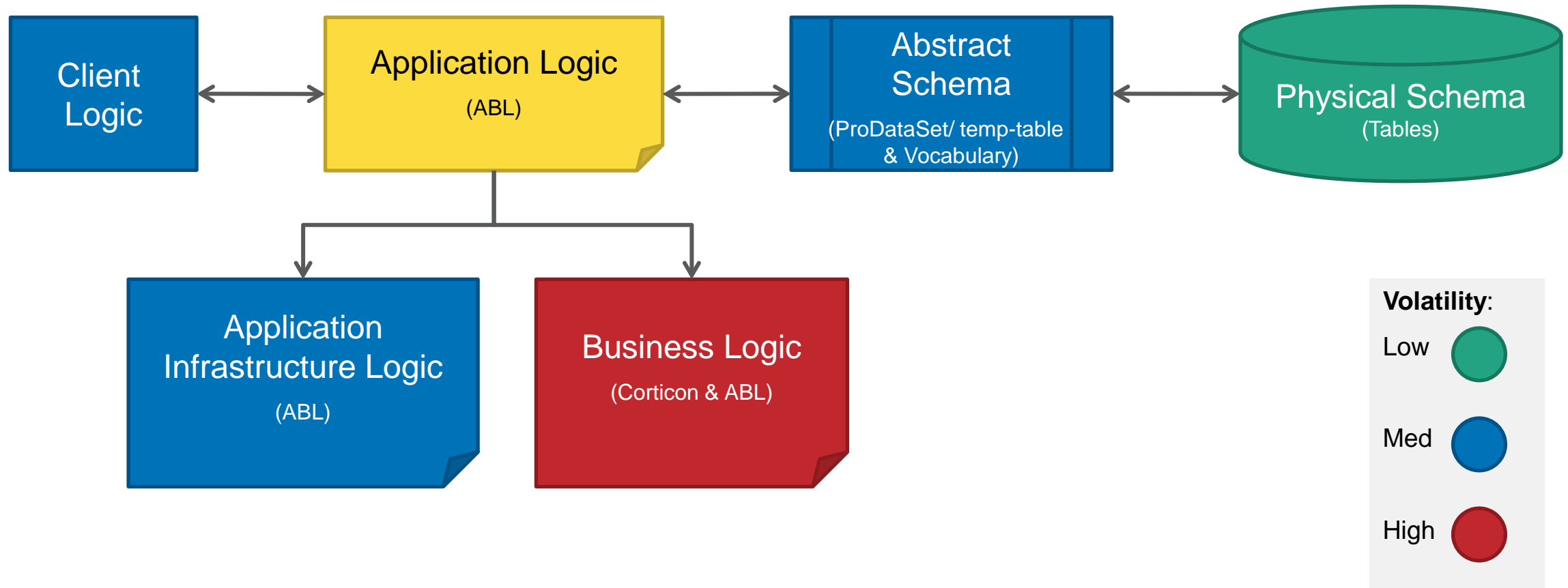


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# OpenEdge Application Architecture



# Why Use Progress Corticon?

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- Avoid Puts volatile decision logic **in hands of business** (domain experts instead of just IT)
- Allows decisions to be managed in a **separate tier** with a more agile lifecycle – separation of system and business logic
- **Accelerates** logic development time and **reduces** maintenance time
- Reduces volatility of ABL logic and **dependence** on ABL experts
- Improves ease of use through **good visual tooling**
  - Build vocabularies and rules declaratively through a model driven approach
- Improves application **quality**
  - Gaps & overlap analysis – prevent technical inconsistencies
  - Use case testing on the fly
- For APs:
  - Configure rules – **don't customize source code!**
  - Build powerful **new functionality**

# Choosing Between ABL and Corticon

- Is the business logic the result of relatively complex decisions?
- Is the business logic customized by the client?
- Are changes frequently required to the application's business logic?
- Is quality / integrity of logic critical?



The more “yes” answers, the greater the benefit from applying Corticon!

# Progress Corticon and OpenEdge

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- Products Integrated Today
  - Integration White Paper Available
  - Integration Options
    - Web Services Call-Out (Decision Points) – via ABL and OpenEdge BPM
  - Requires OpenEdge 10.2 (or higher)
- OpenEdge 11.3 (or higher) Integration Productivity Features
  - ABL API/macros to eliminate integration code
  - Shared Data Model
  - Direct Integration with OpenEdge Database (Batch Processing)
  - Improved OpenEdge BPM Integration

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# CORTICON

**Progress Corticon improves decisions and cuts development costs by managing the business rules that drive business processes**

Progress® Corticon® is a [Business Rules Management System \(BRMS\)](#) that delivers high-quality, high-fidelity, high-performance automated business decisions. It helps increase agility of decision change processes and enables new insights into the connections between individual recurring decisions and business performance.

Progress Corticon separates decisions from processes, helping both business and IT users quickly create or reuse business rules. Business analysts can identify, automate, and deploy automated business rules and decision systems in collaboration with IT but without the need for expensive custom coding. IT is now able to focus more of its valuable time on innovation rather than updating code.

The market-leading platform for automating and executing business rules, Progress Corticon is used by more than 450 customers worldwide. Customers in various industries such as financial services, government, insurance and more have realized significant bottom- and top-line results using Progress Corticon to codify, program and deploy business rules. They see improvements in decision automation, decision change processes, and decision-related insights.

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## COMPONENTS



### Corticon: Business Rules Studio

Corticon Studio allows you to easily model and deploy business rules without the need for traditional programming.



### Corticon: Business Rules Server

Corticon Server is the patented "no-coding" rules engine, and its performance is unmatched in the industry



### Corticon: Enterprise Data Connector

Corticon Enterprise Data Connector can help you connect your decision services to external data sources, increasing agility without the need for expensive custom coding.

# Summary

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Better, Faster Decisions  
by Automating  
Business Rules

## Client Benefits:

- Mitigate Risk
- Optimize Operations
- Find New Revenue Opportunities



Patented  
“No-Coding”  
Rules Engine

## IT Benefits:

- Accelerate Rate of Change
- Empower Business Users
- Ensure Performance and Scalability





## Contact Details

Mark Allen – [maallen@progress.com](mailto:maallen@progress.com)

**Learn More / Download Evaluation Software:**

[www.progress.com/corticon](http://www.progress.com/corticon)

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