FINEOS

Process automation – how to make the business responsive

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Abstract

This enthralling white paper outlines the importance of configuration solutions to ease of business change. It details the macro pressures that have led to a business environment that is completely unrecognizable from that of 30 years ago, primarily due to the need for constant change to processes and IT platforms.

The paper examines the historical evolution of 'flexibility' as a concept in businesses' strategy. It looks at what IT vendors and systems analysts have to offer regarding intelligent automation and flexibility before concluding with two case-study examples of financial services companies that have successfully introduced flexible business processes to the way they do business.

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Background

In today's competitive landscape, businesses live and die on their ability to respond rapidly to changes in their operating markets. These changes can be legislative, competitive or customer-specific.

The business strategy press is full of case studies comparing super-tanker organisations that need a very long time to react or change direction and those powerboat organisations that can turn on the head of a pin. The objective of most organisations of any size is to build into their business processes the ability to respond rapidly to any change agent and to not get taken by surprise.

In most financial services organisations, this ability to respond rapidly to change takes several forms: implementing flexible IT systems which can support the introduction of new products and services; the modification of business processes; document fulfilment; and regular processing logic at the lowest cost and most importantly in the shortest timeframes.

Any organisation conducting a systems renewal program in this climate will ask the following questions of any proposed system:

- How quickly can I support product changes?
- What about new channels?
- What about my New Business underwriting/acceptance rules?
- What about the rules for claims/withdrawals validity?
- What about the business processes and underlying work flow?
- What about documentation and fulfilment?
- What about the underlying product engine? How is the regular processing affected by changes in business rules?
- What about quotations?

Ideally, the organisation will implement systems that give high levels of flexibility in the areas of product and process configuration. In addition, different sectors will have expert data that needs to be combined with the product and process configuration to run a profitable business. Examples include:

- **Lending**: credit scoring, credit reference check and fraud information
- **Healthcare**: patient diagnosis and appropriate treatment rules, standard costs for procedures
- **Life**: medical report, central life application reference, mortality rates
- **General Insurance**: Rating engines to provide premium information based on claims experiences and replacement/repair cost metrics. Fraud checking systems

Any organisation wishing to build flexibility into their business needs to get the building blocks right.

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Evolution of Flexibility

For the majority of the twentieth century, the financial services industry was dominated by paper-based and people-intensive systems. When change happened, businesses responded by designing and issuing new paper forms and adding as many people as required to run the new processes.

Technology was introduced initially to allow companies to perform large repetitive tasks in the available time. This was where punch cards were used to sort and print, allowing companies to manage the headcount but also to grow large customer bases.

As cost-pressure from salary inflation and strong competition has driven down margins and brought these organizations into loss-making situations, it was clear that the IT systems would need to be more efficient in order to ensure long-term survival.

The early systems focused on product flexibility, using data matrices combined with system logic to allow new products to be easily defined by defining new entries in the product definition tables.

Many contract administration package providers blossomed by providing systems with very cleverly designed product definition and configuration tables that allowed a large degree of flexibility "out of the box". This parameter-driven approach meets some of the flexibility requirement – but stops short of solving the problem as it merely allows the data inputs to pre-defined algorithms to be varied.

In the twenty-first century, a business solution that will support flexibility and rapid response (e.g. fast loan acceptance, claim settlement, etc.) requires high degrees of straight-through processing and automation. This means that it must be possible to incorporate the very best of human expertise and supporting data within the operation of the system. This requires an approach that goes beyond the "linear" solutions of business logic combined with data tables.

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Those organizations that survive the levels of competition and rapid market change that we are now facing will employ a variety of software tools within their business solutions, allowing them total flexibility over the configuration of:

- **Product:** what features and facilities are offered and how they are priced (by channel, customer, feature etc.)
- **Process**: the business process employed to provide each aspect of the service being requested.
- **Documentation/Communication**: the format, content and medium of communication with involved parties.
- **Charging/Billing**: the means and efficiency with which money or equivalent is collected by/dispatched from the organization.
- **Acceptance/Underwriting/Claims Adjudication**: the core business rules that underlie the core "profit-making" business process of the organization. Increasingly, it will be poor performance in this area that will see businesses disappear or be targeted as cheap acquisitions – and conversely that will see the most successful players thrive. Underwriting and claims-handling process automation is where the battle will be lost and won in this field.

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Software Solutions for Flexibility

The software industry provides a variety of solutions to the issue of flexibility. Normally, there are some tradeoffs between speed of execution and ease of business change that dictate the path taken by most organizations.

As a general rule, the significant increase in the processing power of modern computers is allowing a stronger leaning towards ease of change vs. absolute processing speed. The newer development typically can be used by non-programmers – which again removes the knowledge/translation gap between business users, systems analysts and programmers.

Sample software solutions for financial services companies who want to address their demands for greater flexibility include the following.

- **Data/Configuration tables**: holding data in tables and feeding algorithms with that data to obtain different results is a time-honored approach and still valuable today.
- **Pre-programmed logic**: it is typical for core algorithms such as actuarial calculations or quotations to be pre-programmed in a rapidly executing programming language and made available for re-use from any of the systems that require them.
- **Process Networks**: tools like FINEOS Process Composer can be used to design business process networks that allow users to graphically (and rapidly) define business processes and allow variants of these processes to be used in different, configurable circumstances. This provides a high degree of flexibility in the area of business process change, work practices and the general treatment of work.
- **Decision Trees**: once more, Process Composer can be used to implement decision trees such as those that are typically inferred in underwriting situations where we wish to arrive at a goal such as a decision to accept or decline a loan or healthcare application. In the past, these would have been hard-coded as programming logic and quite slow and difficult to change. With graphical tools and faster processing power these can be interactively modeled and tested and put into production following verification.
- **Business Rule engines**: Decision trees and process networks are similar in that they effectively allow the definition of logical flow. Business rule engines are typically repositories for logic configured in a language/tool that is normally easy enough for a non-programmer to use. They normally allow the definition of granular discrete pieces of logic which when combined implement the calculation, validation or other business rules of the organization. Typical business rule engines include Blaze systems and ILOG rules.

- **Matching Systems**: many organizations in the financial services sector have products or services that require complex matching algorithms. These examples are non-linear and involve throwing a query at the matching engine that examines the configured business rules to return a set of matches. Matching Systems (emerging from IBM Zurich Research Labs) are a typical vendor in this space.

  - Given a particular set of customer information recommend a set of suitable investment products.
  - Given a set of proposal details detect what set of product rules should be applied.
  - Given a particular medical diagnosis and resulting claim deduce the appropriate treatment strategy that should have been employed and compare it to that actually employed. This allows for the deduction of fraud or overcharging.

- **Custom Engines**: For each business sector there are vendors who offer specialized engines that optimize one or more aspects of the supply-chain. These are often componentized offerings that must be integrated into the IT infrastructure and systems of the organization. Examples include:

  - Scorex Transact: market leader in credit score calculation engines.
  - Munich Reinsurance Magnum: market leader in Life underwriting rule engines.
  - Derivative Risk engines, Commission package calculation engines.

- **Industry Data Services**: Each industry has its own providers who supply accurate, timely data that encourages and supports automation e.g.

  - Credit Reference checking agencies: Experian, Equifax.
  - Vehicle repair and sale data: Glasses, CAP.
  - Industry reference databases: Rejected applications database (Life Register), Central Claims database (GI).
  - Standard databases and data formats: ICD9, CDC4 codes, HL7
  - Data sharing and EDI networks (and related standards): Vecozo healthcare initiative, ABZ network in Holland, Assurelink in Ireland, the Exchange in UK etc.

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What is the right answer for your business?

So what is the right answer for your business? The simple answer is the right combination of these and other technologies that gives your business the flexibility where you need it!

FINEOS works with each customer to define the best software strategy to bring the level of flexibility required – and that fits with flexibility present in the pre-existing IT infrastructure.

We bring our knowledge to bear to use as appropriate:

- **Data/Configuration tables** for core, static information that is required by all products.
- **Pre-programmed logic** for well-defined and stable algorithms, systems integration/core database update routines.
- **Process Networks** for all business process flows.
- **Decision Trees** for all linear business decision making.
- **Business Rules engines** where rules are rapidly or regularly changing and where business user/non-programmer involvement in this process will bring significant advantage.
- **Matching Systems** where there is a requirement for a non-linear search against a large number of variables that needs to be changed with ease.
- **Custom Engines** where they give significant advantage over generic solutions such as process networks, decision trees, business rules or matching systems. The advantage will sometimes simply be the expertise of the provider in implementing the organizations rules within their custom engine in a way that will enhance profitability or stability.
- **Industry Data Services** as they are dictated by their industry.

A FINEOS Solution Architect decides the exact mix of these, and other leading-edge technologies employed for a particular solution. The selection depends on a number of factors, including:

- **Existing systems**: Flexibility already present in customer systems
- **Cost constraints**: additional "engines" may attract further license or recurring usage fees.
- **Technology preferences**: the technology and architectural preferences of the customer.
- **Target audience**: if business users with little IT training are making there own changes then more graphical, high-level tools are required that those delivered for IT specialists.
- **And so on…**

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Case Study 1: Motor Finance New Business Lending System

Customer situation

The customer in question – GE Financial – operated in the very competitive motor finance and leasing market in the UK when it went to market for its straight-through processing solution. Automatic underwriting rates of 15% were being achieved and slow turnaround of decisions to motor dealers.

Customer requirements

To significantly increase the automatic underwriting rate to allow decreased headcount and vastly improved turnaround times to motor dealers.

Results

A FINEOS implementation that increased automatic underwriting rates to between 85 and 90% and reduced turnaround times from hours or days to between 3 and 15 minutes from the time of proposal input.

The customer needed a high level of business responsiveness to change:

- Ability to tailor acceptance criteria depending on the quality of business from certain dealer groups.
- Ability to easily change the base underwriting rules while respecting the broad criteria set by risk policy unit.
- Ability to alter business rules by any factor such as manufacturer, type of vehicle, dealer and any customer criteria.

Design Decisions

The following design decisions were made in relation to this solution:

Approach	Used for
Data/Configuration tables	Basic product rule data Dealer credit score acceptance bands Dealer vehicle age acceptance bands Internal System Code translation
Pre-programmed logic	Loan interest calculation Mainframe lending system updates
Process Networks (FINEOS Process Composer)	Core Loan Underwriting Internal referrals and ad-hoc business processes e.g. Fraud Document Production and follow-up.
Decision Trees (FINEOS Process Composer)	Core Loan Underwriting
Business Rule Engines	None (but could have been used for loan validation)
Matching Systems	None (but could have been used for product rule selection algorithm)
Custom Engines	Scorex Transact used for Credit Score calculation and analysis
Industry Data Services	Glasses Guide & CAP used for vehicle values Experian used for individual credit reference check, Equifax for companies

Product Selection

The customer had a pre-existing product database or matrix built for its mainframe system. Rather than select a product they used an algorithm to deduce the product code based on the data input. We re-implemented the COBOL algorithm in Java but a matching system could have provided a more flexible approach to product selection had it been required.

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Underwriting

Underwriting is the core "profit making" activity in the lending business. In this case we:

- Captured the loan proposal details
- Retrieved existing loan details for existing customers.
- Requested a real-time credit reference check with Experian or Equifax.
- Calculated the loan interest and repayment amounts using a blackbox calculation engine.
- Requested a credit score figure from the Scorex Transact engine that is a custom data analysis and scoring tool, which has dominance in the lending market. Typically the Scorex consultants are very skilled and scorecard design and implementation and configure the scorecard into the engine and it runs as a blackbox.
- Finally using all of the data collected FINEOS Process Composer was used as a Decision Tree engine to examine all the data available and produce a final decision in the form of a Acceptance, Decline, Conditional Acceptance or Termed Acceptance task. The broad parameters of the underwriting were set by the credit score returned by Transact; while the wider business rules and context were implemented in Process Composer. This reflects the more static nature of scorecards and the more fluid nature of the business rules and flow around the scorecard answer. This pattern of combining a harder-to-change specialized custom engine with the flexibility of Process Composer is quite common.

The result was a system that was very flexible to change based on a host of criteria determined by the market, individual customers, risk policy unit or other business drivers.

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Case Study 2: Disability Claims System

Customer situation

Broadspire Workability is a leading provider of employee absence management, covering 1.8 million employees nationwide. It services over 300 clients, including nearly 60 Fortune 500 clients.

Customer requirements

It sought to speed up its claims management process by:

- Making it easier to introduce process change for specific customer requirements. Essentially, they needed a software system that would provide them with greater flexibility
- Improving the accuracy and speed of data capture
- Reducing paper flow and improving communications
- Introducing intelligent workflow automation mechanisms for routing of tasks, auto-generation of follow-up tasks, service level agreements, status reporting, automatic updates and orchestrating – as well as eliminating – manual workloads

Results

A FINEOS implementation, which:

- Reduced overall claims admin costs by 10-15% Reduced new business customer implementation costs by 10%Cut down on error-prone, paper-based processes
- Reduced time lost on handing over tasks
- Standardized business processes
- Reduced claims handling cycle times

The main features of the implementation were as follows:

- Processes claims on a direct and third-party administration (TPA) basis
- Provides a claims workbench with single view of customer, case and claims information
- Intelligent workflow automation enables process-driven claims streaming and decision making
- Automates composition of outbound letters, emails, forms, notices, etc.

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Design Decisions

The following design decisions were made in relation to this solution.

Channels:	Call Center
Legacy integration:	SOAP interface to FML Management System & JDBC connections to other back-end admin systems (DRMS). This data is held in the FINEOS database for the duration of the claim and used by Process Composer in evaluation and decision-making.
Application platform:	Windows NT application server, Weblogic application server, and Oracle on Sun Solaris
Third-party software:	MS Word®
Rules	In-house Duration Guidelines system

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Conclusion

The objective of this paper has been to:

- Outline the importance of configuration solutions to ease of business change
- To briefly outline some of the more common solutions
- To give some background to where each solution might be employed
- To illustrate using an example FINEOS' experience in selecting the appropriate mix of technologies based on the level of flexibility required by the customer: experience that melds both our technical and business knowledge