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Premium report

Technology & Suppliers

Sapiens DECISION: Managing business decision logic at scale

March 2017

Sapiens DECISION – formed when financial services software specialist Sapiens bought Knowledge Partners, Inc. in 2014 – has a formidable track record as a theory and practice pioneer in the decision management space. It's pushing hard to expand its audience.

Top takeaways

1 A unique proposition for managing business decision logic

Founded on a sophisticated, logical approach to analysing and modelling business decisions and their implementations – The Decision Model – Sapiens DECISION's DECISION Suite is a unique proposition in the Decision Management technology marketplace. It provides an integrated suite of tools and capabilities to help teams of business analysts and subject-matter experts define and manage business decision logic through its lifecycle – and although the artefacts you create with DECISION Suite can be automatically translated into executable business rules, the practice you create and support with DECISION Suite is completely independent of any particular business rules technology.

2 A focus on large-scale decision management initiatives

The validation, testing, governance and control capabilities of DECISION Suite are formidable – and if you need to work with significant-sized, perhaps distributed teams to manage large, complex decision logic then those capabilities will prove invaluable. This will be particularly true in scenarios where regulatory compliance is part of the picture – the ability to clearly associate logic assets back to business requirements, and to implement solid controls over changes to all facets of design specifications, is of major value here.

However if you have more modest decision management requirements, investing time and money to make the most of DECISION Suite's functional depth and richness may be difficult to justify today. That said, the company is investing in architectural flexibility, user experience and feature flexibility – all of which should bear fruit in the coming months. This is welcome.

Another suitability factor worth mentioning is DECISION Suite's support for the DMN standard – which is partial, though improving. Lastly, it's worth noting that DECISION Suite is focused exclusively on modelling and managing prescriptive, rather than predictive, decision logic: decision implementation details are currently defined exclusively using decision tables.

Introducing Sapiens DECISION

Sapiens DECISION was formed by the acquisition of decision management consulting and software firm Knowledge Partners, Inc. (KPI) by financial services specialist software provider Sapiens International in July 2014. The Sapiens parent company was founded in 1982 and currently has around 200 customers and 1,900 employees.

Sapiens' stock is publicly traded on the US NASDAQ and Israeli TASE exchanges. The company made a $19.3m net profit for 2016, on revenue totalling $216.2 million (a 16.5% increase over the previous year).

Sapiens has offices in North America (New Jersey, Cary NC, Toronto), UK, Europe (Belgium, France, Poland, Denmark), Turkey, India and Asia-Pacific (Australia, Japan and Singapore) as well as Israel.

Sapiens DECISION focuses primarily on financial services use cases (mortgage origination, servicing and securitisation; core banking, risk management and compliance; investment banking) but also runs specialised teams focused on the needs of healthcare and insurance / retirement services providers.

Sapiens DECISION's core product is the Sapiens DECISION Suite – a comprehensive software tool and platform suite designed to support the discipline of business decision management 'end to end', specifically in relation to prescriptive business logic (rather than aspects of decision management relating to predictive statistical modelling). DECISION Suite is currently on version 6.2.

The company licenses each of the modules of the DECISION Suite separately, using a subscription licensing model (typically each license is for 1-3 years, and includes support). The design-time elements are licensed on a per-user basis, and the runtime platform elements are licensed according to the size of the server footprint (in terms of server hosts, cores and distinct target environments). Modules can be deployed on-premise or delivered via a managed service, hosted on the AWS cloud platform.

Inside the Sapiens DECISION offering

Underpinning everything: The Decision Model

Sapiens DECISION's technology offering was designed from the ground up to implement KPI's patented approach to Decision Management, called The Decision Model (TDM) – which in turn was invented and refined over many years of KPI consulting engagements. The concepts that TDM defines and implements continue to form the guiding framework for how Sapiens DECISION enhances and delivers its products and services.

As its name suggests, The Decision Model approach doesn't focus on modelling and executing business rules in isolation. Rather, it focuses on the analysis of how business decisions are made, and how sets of business rules and the supporting information they require need to be composed in order to implement those decisions. TDM is completely complementary to technology tools and platforms that focus on automating decisions, because TDM is all about how you analyse, design and then manage business decisions through their lifecycles – treating your organisation's business decision implementations as business assets.

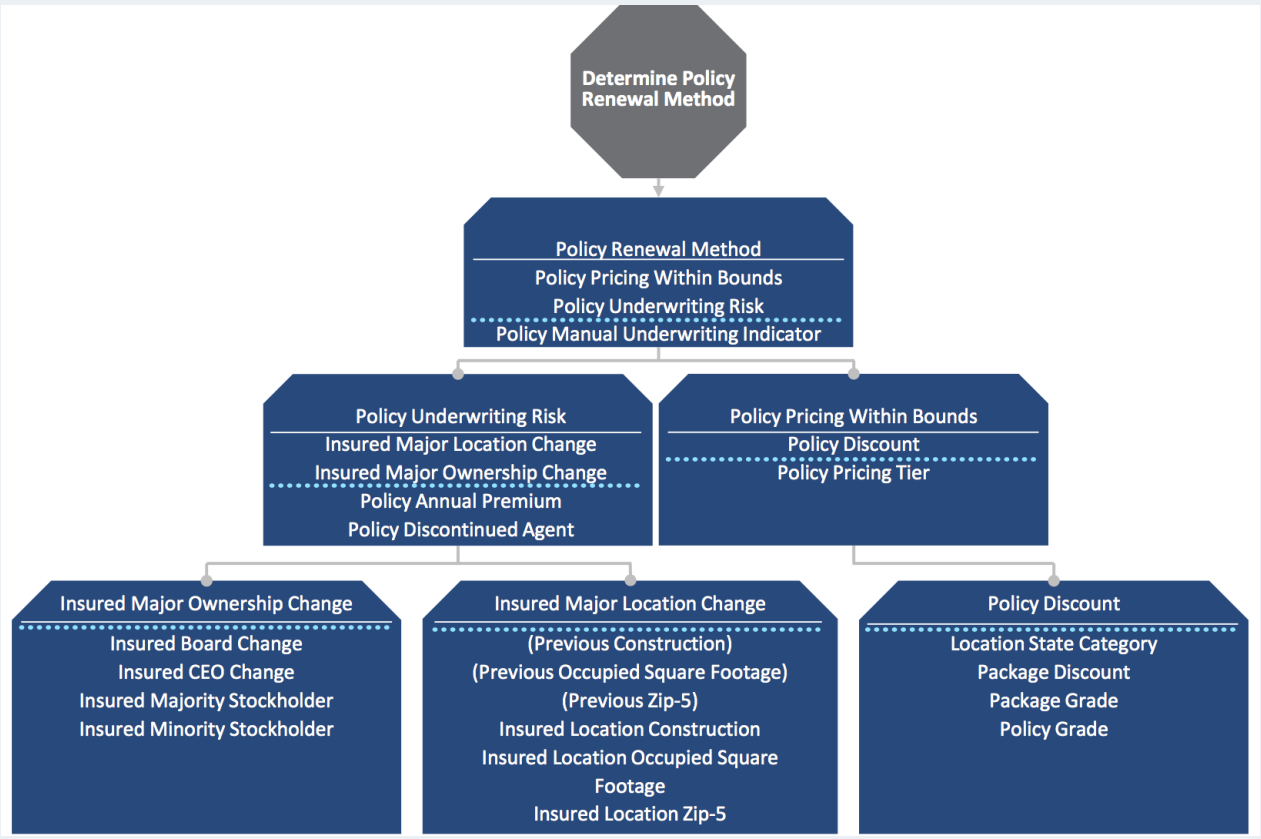
There are three fundamental decision design concepts that provide the logical foundation for TDM:

- **Decomposition**. With TDM, you design business logic models in a modular fashion so that any piece of logic can be changed independently of any other piece of logic.
- **Normalisation**. With TDM, you shape rules and data in a way that makes sure that each rule and data element is defined once and only once in the system. This helps ensure that models are consistent across an organisation, and also means that it's easy to trace and minimise the impacts of changes.
- **Reusability**. With TDM, you group logic and data definitions together to maximise their reusability across multiple business decisions and scenarios.

Importantly, TDM as an approach isn't just about creating static representations of business decisions and how they're implemented through rules and facts. TDM is also concerned with how you maintain the quality of decision assets over time, and it does this by imposing a set of integrity validation, change management and governance processes.

Figure 1 provides an overview of an example decision model.

Figure 1 A simple Decision Model example



Source: Sapiens DECISION

Sapiens DECISION Suite

As mentioned above, DECISION Suite is built specifically to support and implement TDM concepts from end to end across the lifecycle of business decision logic in business-critical operational environments. As such, its foundation is a sophisticated multi-user design repository that enables large, complicated decision modelling artefacts to be managed by large, distributed teams.

There are four key elements in the DECISION Suite today:

- **DECISION Manager (DM)**. This decision modelling and management poduct is the central piece of the suite, and the core technology is the Visual Decision Model Workbench (VDMW). It's currently deployed as a Silverlight application inside Microsoft's Internet Explorer browser, and connects to a shared repository server storing specifications in a relational database (Oracle and SQL Server databases are supported). There are five important capabilities in VDMW, as follows:
  - **Decision modelling**. VDMW provides graphical facilities for your analysts to create and maintain decision models, rule families (visualised as decision tables), decision flows and fact types. Figure 1 provides an overview of the top-level view of a sample decision model; DECISION Manager implements the native TDM notation, and also has a degree of support for the OMG's standard DMN notation.
  - **Community and glossary management**. Each shared DECISION Manager repository can be compartmentalised and federated into multiple 'Communities', enabling large organisations to federate ownership of decision management work across teams, departments, business units and even business entities. Communities can be arranged in hierarchies, and inherit configuration from their 'parents'. Each community may have its own Glossary of fact types (or it may inherit this from a parent).
  - **Change management**. DECISION Manager provides robust change management capabilities across all the objects (rule families, fact types and so on) in a repository: no change can be made without a change request and associated change document created in DECISION Manager, and there's complete traceability between every asset version and its associated change request and document(s). What's more, since version 6.2, it's also possible to link change requests to external change-related documents.
  - **Validation and testing**. DECISION Manager imposes strict controls over logic specifications that an analyst requests to submit from their own personal 'whiteboard' (within their own instance of the VDMW). Although designs can be iteratively refined in the context of a whiteboard, it has to pass a battery of logical validation tests, aligned to the key concepts central to TDM, before they can become versioned as repository assets. There's also an automated test case generation facility and the ability to carry out 'what if' analysis on decision logic using simulated data.
  - **Governance and control**. An embedded workflow engine drives tailorable governance processes, ensuring that policies you design about who can make and approve changes are always implemented consistently. Each community can define its own governance process. There are also sophisticated features enabling you to query the repository to ensure traceability of requirements between external documents, decision model elements and code; run traceability reports; deploy assets into production; and analyse policy and other text documents to extract potential decision logic, and determine its potential impact.
- **DECISION Execution (DE)**. As the name suggests, this is an execution server for automating the implementation of decisions you've modelled with DECISION Manager. DECISION Execution ships with both SOAP-based and RESTful APIs, so other technology services in your environment can invoke decision services. It's also possible to embed DECISION Execution as a Java component library, rather than running it as a standalone server. DE uses Oracle or SQL Server databases (the same versions as certified for DM) or flat files for internal storage.

- **A set of Deployment Adapters (DD)**. As well as providing its own execution engine, DECISION enables you to compile and deploy decision logic you model with DECISION Manager to other execution environments. Currently there are adapters that generate code for IBM Operational Decision Management (ODM), JBoss Drools, and Java. There's also a SDK so you can write your own adapters to support other execution languages if you need to. Note that even when deploying to environments like IBM ODM, Sapiens DECISION treats these as pure execution environments rather than as decision management environments – removing the need to use any of the design or development tools they provide.
- **DECISION InfoHub (DI)**. Based on Apache Cassandra technology, DI is a distributed data virtualisation layer that creates and manages a collection of business object definitions, queryable using SQL. DI aims to both ease decision and rule family development, and to facilitate faster decision analytics and optimisation. There's an inbuilt Extract-Transform-Load (ETL) tool to populate DI with data from external sources; transparent synchronisation technology that ensures externally-sourced data is kept up-to-date in DI when it's updated; and in addition, strong object-level data security (where each object is encrypted using unique keys).

QuickSTEP services

QuickSTEP is Sapiens DECISION's implementation methodology: like DECISION Suite, it's tied into The Decision Model concepts. The company has four distinct service offerings that tie into DECISION STEP:

- **Discovery** – a day-long workshop designed to rapidly model, validate and test a first-cut implementation of a key business decision.
- **Education** – a range of classroom training packages designed to educate clients on The Decision Model as well as use of the DECISION Suite technology components.
- **Implementation** – where Sapiens DECISION consultants take responsibility for delivering a complete project end-to-end, optionally also helping to create a centre of excellence (COE)
- **Augmentation** – where the company provides 'fill-in' business analyst and architecture staffing to help boost clients' resources on implementation projects.

Future directions

Sapiens DECISION has two specific product and technology priorities.

Firstly, it's developing a new module within DECISION Suite called DECISION Analytics – which will offer clients the ability to explore the business outcomes of a given set of decisions, and relate those to the decisions themselves; and analyse opportunities to improve outcomes by adjusting the details of decision models and their rule families.

Secondly, it's redeveloping its tools' user interfaces to eliminate reliance on Microsoft's now-deprecated Silverlight technology and shift to standards-based HTML5. The first fruits of this are already apparent in DECISION Suite 6.2, where the administration tool is now HTML5-based; the company is currently working on porting VMDW to this technology too.

Along the way, though, the company also plans to release a standalone cloud-based, lightweight decision modelling tool that's HTML5-based. Sapiens DECISION plans to use this new tool to underpin a new SaaS-based offering that will help it grow its customer base within mid-sized organisations.

Recommendation: consider Sapiens DECISION if you need to manage complex decisions at scale

It's important to remember that the design centre of Sapiens DECISION Suite is not the automation of business rules; it's the analysis, design and management of business decisions as business assets through their lifecycles. Yes, there is an automation piece, and indeed there's real variety and choice you have in terms of decision automation options; but that's not the core part of the value that DECISION Suite provides.

The validation, testing, governance and control capabilities of DECISION Suite are formidable – and if you need to work with significant-sized, perhaps distributed teams to manage large, complex decision logic then those capabilities will prove invaluable. This will be particularly true in scenarios where regulatory compliance is part of the picture – the ability to clearly associate logic assets back to business requirements, and to implement solid controls over changes to all facets of design specifications, is of major value here.

However if you have more modest decision management requirements – even where you may have many modestly-complicated use cases that need to be addressed across your business – investing time and money to make the most of DECISION Suite's functional depth and richness may be difficult to justify, at least until the company releases its planned lightweight modelling tool and platform.