Sparx Systems: Mastering Enterprise Processes through Agile Modeling Tools

By Shashikanth Peetla

Business Process Modeling captures the pulse of an enterprise building maps of the thousands of activities that daily transform information and materials in ways that relentlessly drive a company forward. People, IT equipment, suppliers and communications channels are evaluated on how well they participate and facilitate the execution of a process. Imagine what the power of visualizing each of these interacting entities and their interdependencies in real time can do to process management.

Bringing such an advantage to the fore for over two decades is Sparx Systems—delivering tool suites that not only capture dynamic process information, but also show it in visually enriching ways.

“Sparx Systems grew out of my desire to build effective visual modeling and design tools whilst at university during the early 1990s,” says Geoffrey Sparks, founder and CEO, Sparx Systems. He first started developing process mapping tools for gaming software development and became strongly aware of the need for tools that supported process development and architectural design.

Architectural modelling imposes a structured methodology on the planning and development process. It constantly forces the team to align architectural design and resource allocation to the underlying business requirements. It keeps everyone on the path...
As a tool vendor Sparx Systems is focused on providing high precision modeling and design tools that match the needs of consultants, trainers and industry in general.

Geoffrey, exploited the custom extension features of UML, the general-purpose modeling language, repurposing process design software to suit different aspects of product development. “I utilized it to add extensions to support the broader effort of defining business processes, requirements, project management, testing and other necessary facets of a fully integrated enterprise-wide model that in turn gave birth to our flagship product line,” states Geoffrey. “It also means continual refinement and support of the model, build, profile, test, manage and deliver our software product line,” states Geoffrey. “It also means continual refinement and evolution of the Enterprise Architect platform to better support the needs and requirements of the modern, agile company,” he adds.

Supporting the modeling of enterprise architectures, software and hardware systems, as well as many other aspects of the modern business environment, the Enterprise Architect puts business process diagrams and models to exist within the more global context of the architectural and systems environment. Agile development provides a shared and flexible team experience through complete transparency, iterative development and constant feedback, and “it has been the essential design goal of Enterprise Architect for over a decade and it will remain just as valid today,” says Geoffrey. Also, Enterprise Architect’s shared storage capability helps to capture and review information in many different forms, ensuring there is no waste or confusion. Providing this level of traceability and context reveals the reach and effect of both individual and co-operative processes that touch the enterprise on many levels. “Business process models should not exist in isolation but contribute to and draw from the broader strategic, architectural, systems and software models that make up a functioning enterprise—Enterprise Architect is such a shared modeling and design platform,” remarks Geoffrey.

I believe the most important innovation we have implemented internally is the total commitment to use Enterprise Architect to the maximum extent possible to model, build, profile, test, manage and deliver our software product line.

Delivering key competence to the clients

The Port of Melbourne which handles majority of exports for Victoria, a state in the south-east of Australia faced operational challenges in handling a large number of shipping vessels. The Victorian government wanted a seamless system for freight and logistics management to generalize major efficiency gains and reduce freight congestion in and out of the Port of Melbourne. The State then engaged a Sparx Global Partner, an Australian professional services and software organization to build an Enterprise Architecture model of the Port of Melbourne Supply Chain. The model was to enable organizations operating within the Port of Melbourne network to provide a clear picture of how they could improve interactions with supply chain participants and reduce the number of assumptions about processes and information that flows throughout the supply chain.

Sparx System’s Enterprise Architect was selected as the UML Tool by the partner for the Port of Melbourne Supply Chain Model. Developing an Enterprise Architecture framework traditionally has been a time consuming and costly affair, by using Enterprise Architect, they were able to develop an Enterprise Architecture framework within months, rather than years, and in doing so realized a significant cost reduction for the state of Victoria. Furthermore, it has allowed the Port of Melbourne to understand and analyze the business processes in its jurisdiction, and therefore identify and prioritize areas requiring process improvement. “The Enterprise model de-

Geoffrey. “The Model is the first of its kind to be publicly available, and is currently being distributed to industry and education institutions across Australia, to identify opportunities for business process improvement,” he adds.

Sparx Systems Enterprise Architect is widely used across many sectors including finance, defense, government, automotive engineering, geospatial and others. “Any of the Fortune 100 companies use our product. The software has an installed base of 350,000, supported by 230 partners in 160 countries,” promotes Geoffrey. A also, Gartner has recognized Sparx Systems in its 2014 Magic Quadrant for Enterprise Architecture Tools report for the fifth successive year.

The ability to understand a problem, create and share solutions and proof it through simulation by transforming one logical representation into another, is fundamental to Enterprise Architect. “This provides the necessary flexibility and expressiveness needed to meet challenges that are yet to materialize,” says Geoffrey. In the coming years Sparx Systems imagines new tools and information processing capabilities that further support the transformation of models into executable form. “We are also developing new business processes and behaviors to address the increasingly ‘data driven’ world,” he concludes.
The buzz across industry is data. Every organization, irrespective of the sector, has accumulated wealth of data. Traditional computers are unable to process such large amounts of data as the computing power of these systems takes too long to answer questions pertaining to research or astrochemical calculations or engineering designs. A part from this, enormous amount of data brings along complexities such as storage and security which need to be addressed effectively and efficiently. The area that specifically focuses on increasing the computational speed in order to address these issues is High Performance Computing. The IT industry is already making strides to have HPC a cheaper reality for the companies and organizations. According to Computerworld 2015 Forecast Study, 22 percent of IT spending in 2015 will be towards High Performance Computing. HPC ecosystem has already seen influx of revenue from $2 billion to $21.9 billion in the past two decades.

For organizations that are already using traditional, resource extensive High Performance Computers in terms of power, cooling and real estate, there are companies working towards replacing these exhaustive systems and provide cheaper alternatives without compromising the efficiency. The emphasis is on providing a robust solution that stands test of time. Moreover, the non-IT industries and labor intensive industries require simulators to build models that provide accurate prediction based on the historical data.

In our selection, we looked at vendor's capability to provide technology solutions to streamline operations in a faster, less resource consuming manner, while keeping the costs under control. A distinguished panel of CEOs, CIOs, CMOs, VCs, analysts, and the CIO Review editorial board has selected top players from over three hundred companies.

We present to you CIOReview’s 20 Most Promising High Performance Computing Technology Solutions Providers.

**Company:** Sparx Systems Pty Ltd

**Description:** Sparx Systems specializes in high performance and scalable visual modeling tools for the planning, design and construction of software intensive systems.

**Key Person:** Geoffrey Sparks, Founder & CEO

**Website:** sparxsystems.com

New **Total User Interface theming**
For a personalized look and feel. Choose from over a dozen elegant and individual theme styles, from light and airy white styles through to dark and mysterious. Includes ability to hide all menu icons for a clean look. Also supports automatically using dark source code syntax highlighting for dark themes. (View/Visual Styles/Select Visual Style)

New **Portals window**
A major new feature in Enterprise Architect 12. Provides rapid and focused access to many common and many advanced features. Access to open and recently closed documents, searches, common functions, workspaces, perspectives, working sets and much more. A new and indispensable tool for navigating and building models. Access to Portals page is also available by clicking on the Start Page icons associated with each page. (View/Portals)

New **Navigator bar**
Provides Windows Explorer like access to your current position within the model. A minimalistic alternative to using the Project Browser or simply to keep track of your current location. Also includes a Package Finder, Portals shortcut menu and menu access to many common package based functions. (View/Navigator)

New **Database Engineering toolset**
Including Database Builder window and new DataModel pattern. Supports construction, exploration, differencing, query, DDL generation, Alter DDL, import and merge in a database centric fashion. (Tools/Database Builder) and (Package/New.../Database/Database Engineering)

New **Wireframing Support**
Comprehensive and detailed support for wireframing a huge range of common devices and implementation scenarios using custom drawn graphics. Web, Apple, Android and more. (New Diagram/Wireframing/<selecttype>)

New **Schema Composer**
Quickly and effectively build XSD and other schemas from a selection of elements within the model. Currently targets UN/CEFACT, UML, CIM, ITEM and generic XSD, OWL and other formats. (Tools/Schema Composer)

New **XSLT Debugger**
Full support for working with XSLT documents, including execution and single stepping. Comprehensive properties and integration with Enterprise Architects visual analysis tools. (Tools/XSLT Debugger)

New **XML and XSD Editing and Validation**
New support for viewing the structure of XML and related documents and for editing and navigating those documents. XML intelligence support. Also includes new support for validating XML documents using XSD. (Tools/Options/Source Code Engineering/Code Editor/File Associations)

New **Default Document Handler**
Support for many common types. Provides the ability to use built-in source code editor as the default Windows editor for source code, text, XML, XSD, RTF and other types commonly supported by Enterprise Architect. On launch from Windows by double clicking an open instance of EA will be prioritized; if none exists a new instance is started. (Tools/Options/Source Code Engineering/Code Editor/File Associations)

**Release Highlights**
(Note: The following list is an overview of major changes in version 12. A more detailed list can be found at sparxsystems.com/ea12)

**NEW “Package” main menu**
Provides focused access to major functionality associated with Packages. Allows the Project menu to be more tightly focused on Project level functionality.

**NEW Package Navigator windows**
Replaces the old package browser window. Integrates a custom Navigator bar into each window and allows multiple instances to be open. Supports View as List and View as Gantt. Quickly navigate the project package structure without using the Package Browser. (Package/View as List – Package/View as Gantt)

**NEW Support for XMI merge using Baseline Merge sets**
Provide the ability to selectively merge sets of changes in a multi-user environment. Each user must supply both an XMI of their current work, plus a Baseline merge file detailing how their XMI differs from the original. Only the changed changes are merged and all other changes to the Master package remain untouched.

**NEW Visual Studio Link and Eclipse Link**
Now built in to Enterprise Architect Professional and above. Tighter integration with the built in Visual Analyzer tools, including automated creation of VEA Build scripts based on the Visual Studio Project configuration etc.

**NEW Element Types**
Including Checklist (Artifact) and Project Management Types (Backlog, Event, Milestone, Meeting, Phase, Risk, Sprint, Version) Available as a new diagram type “Project Management”

**NEW Design Common Property dialogs**
Redesigned to provide a better user experience and more efficient use. Dialogs changed include the main element property sheets, new model from pattern, relationships, operation and attribute dialogs, and the merging of the table attributes and constraints property sheets into one common dialog.

**NEW Redesign Start Page**
Now more effective and attractive Start Page, including rapid access to principal Portal pages via specialized icons.

**REDISEIGN Main Menu**
A major overhaul of the main menu structure to provide better and more effective access to both existing and new tools. Also included is the ability to turn off main menu (and Portal) icons for a cleaner and less cluttered look. (see View/Visual Style/Select Visual Style – Show Menu Icons)

**REDESIGN Element Maintenance and Project Management**
Docked windows split into their component windows as they can be docked in a wide variety of layouts. Added additional maintenance types: Decisions and Events. (Element/Maintenance)

**REDESIGN Test window**
Modified to better show all current tests on an element. (Element/Testing)
About Sparx Systems

Sparx Systems specializes in high performance and scalable visual modeling tools for the planning, design and construction of software intensive systems.

With customers in industries ranging from aerospace and automotive engineering to finance, defense, government, entertainment and telecommunications, Sparx Systems is a leading vendor of innovative solutions based on the Unified Modeling Language (UML) and its related specifications. A Contributing Member of the Object Management Group (OMG), Sparx Systems is committed to realizing the potential of model-driven development based on open standards.

✔ The company's flagship product, Enterprise Architect, has received numerous accolades since its commercial release in August, 2000.
✔ Now at version 12, Enterprise Architect is the design tool of choice for 350,000+ registered users world-wide.