

## TECHNOLOGY AUDIT

# ActiveVOS v9.0

## Active Endpoints

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## SUMMARY

### Catalyst

There is a strong requirement to consider BPM from the integration point of view. This may appear to be old hat as BPM from the earliest days was seen as an answer to the ongoing problem of integration. However, over the years, a plethora of point BPM solutions has led to situations in many organizations in which there are silos of processes and management systems without the required integration. ActiveVOS is a solution that creates an integrated process environment, and Active Endpoints, Inc. is being implemented in organizations that already have BPM but that are not gaining the expected benefits – especially in respect of end-to-end visibility with the organization.

## Key findings

Table 1: Key findings	
Strengths:	<p>Direct translation from BPMN 2.0 to execution on BPEL 2.0 engine drastically reduces throughput overhead.</p> <p>Collaborative design environment</p> <p>Suitable for all deployment sizes</p>
Weaknesses:	No hosted or on-premise (managed) deployment option
Key facts:	<p>Quick Start program available with strong focus on knowledge transfer</p> <p>Deployable on all major app servers.</p>
Source: Ovum	

## Ovum view

### ActiveVos v9.0

ActiveVOS is a full-featured BPM solution with a strong focus on creating an integrated automated process-centric infrastructure with high levels of throughput. The latter is achieved by the ability to create BPMN 2.0 models that are directly translatable to run on the native BPEL 2.0 execution engine. This reduces the overhead that used to exist between the defined models and the runtime environment.

ActiveVOS is a lightweight, standards-based business process management system (BPMS), which makes it easy for development teams to adopt. Through its integration and broad functionality, ActiveVOS helps make BPM development teams self-reliant and allows them to rapidly deploy applications that combine system tasks and human workflow.

ActiveVOS offers the following capabilities, all of which are standard in ActiveVOS and integrated into a single product:

- Process modeling and simulation. ActiveVOS allows software engineers, business analysts, and end users to collaborate in the creation of business processes using BPMN.

- ActiveVOS supports import of existing models from unified modeling language (UML), XML process definition language (XPDL), and business process-specific Visio templates.
- Processes can be easily documented by creating outputs in standard formats such as Microsoft Word, HTML, and Adobe PDF.
- ActiveVOS simulation makes it easy for business analysts and end users to identify resource requirements and potential throughput issues. Business analysts can design process models using the ActiveVOS collaborative integrated design environment (IDE) ready for production. The IDE is a graphical canvas on which connections to data and process logic can be easily added.

ActiveVOS is a model-based execution system, which means the value of the model is always preserved and the process that has been implemented can be easily changed.

### **Recommendations**

- Organizations that already have carried out work in BPM and finding that the integration process is still complicated and taking up too much resource will benefit from giving consideration to ActiveVOS.
- Although ActiveVOS takes more than adequate account of human-centric processes, it is especially useful for organizations that have many processes that could benefit from greater degrees of automation and need high levels of throughput.
- Although ActiveVOS has extensive functionality, it is not a solution limited to large organizations. Due to its ease of use allied to a competitive pricing structure, organizations from 100 employees (users) upwards will benefit in both cost and resource terms.



## FUNCTIONALITY

### Solution overview

#### ActiveVOS Designer

ActiveVOS Designer is a powerful integrated development environment (IDE) that allows users to quickly develop, test, and deploy process automation applications. It has a rich set of productivity tools, and advanced wizards make it easy to create executable process models and orchestrations that conform to business process modeling notation (BPMN) 2.0, business process execution language (BPEL 2.0), and WS-HumanTask open standards.

The architecture of ActiveVOS ensures that there are no round-tripping issues as there is no conversion of BPMN models to intermediate artifacts as the models are directly executed as BPEL 2.0.

The process designer provides full support of BPMN 2.0 constructs including loops, decisions, and interrupting and non-interrupting execution events following the arrival of message, timer, error, and compensation events.

ActiveVOS Designer allows for modeling in both structured and unstructured modes. Structured modeling accelerates the creation of new processes and permits the rapid modification of existing ones, while unstructured modeling makes it easy to organize models into swim lanes. The process designer promotes broad collaboration of model-based development across architects, business analysts, and developers.

There are other aspects beyond pure process modeling that come as part of the ActiveVOS Designer and are of great value. There is a full-featured Reports Designer that allows users to create both text and graphical reports, which can then be deployed to the process server. Project templates are included that help speed the report design process. These templates contain configuration details such as database connection details and style elements that help define the layout of the report and its display properties.

Reports can be scheduled and emailed to a defined recipient's list. These reports are available in a number of standard formats, such as HTML, .pdf, .doc, etc.

User-form interfaces can be created using a drag-and-drop interface, and these can be directly integrated with WSDL services to create new processes from data and form input from third parties.



Non-typically, ActiveVOS Designer supports direct, code-free connectivity bindings for SOAP/HTTP, JMS, and REST that does away with the need for an ESB.

### **ActiveVOS Server**

The ActiveVOS server runs on all of the popular standard Java application servers (specifically Oracle WebLogic, IBM WebSphere, Red Hat JBoss, and Apache Tomcat). The process definitions created in the process development tool are standard BPEL4People processes. In order to deploy a process users create a process deployment descriptor for each process. The combination of a process definition and its deployment descriptor is called a deployment plan. The deployment plan can be deployed either directly from the designer tool, from an Ant script, or through a web service call.

When the process is running, the process state and any documents associated with the process are stored in a standard relational database of the user's choice. The execution engine uses a sophisticated journal-based approach to persistence that provides strong performance, fault tolerance, and scalability.

ActiveVOS business processes can take advantage of automated services even when they are not exposed as SOAP-based web services. Processes can use services that are based on REST, XML over JMS, SOAP over JMS, EJBs, or even plain Java classes that are deployed along with the process.

Security, reliability, and other qualities of service can be customized for any service (whether the service is used or offered by the process) through a powerful policy management capability that leverages WS-Policy and the various standards that build on it (WS-SecurityPolicy, WS-ReliabilityPolicy, etc).

The server also includes a pluggable architecture for expression processing. Expressions in ActiveVOS can be written in XPath, XQuery, or JavaScript. Users can extend the functionality of the expression processor by registering custom extension functions. The user needs only do this once to make their function available to any expression language.

### **ActiveVOS Automation for Analysts**

This functionality allows developers to customize and deliver a simplified ActiveVOS design environment tailored for use by their business analysts. The business analyst can then automate processes without any further involvement from IT.

The simplified process palette lets business people create, update, and deploy any BPMN 2.0-compliant process model within the controlled bounds set by the development team. The analyst simply drags and drops predefined activities, services, and pattern icons from the palette onto the canvas to implement the process's control flow.

The control boundaries are highly granular and allow the development team full control over all aspects of the process model being created by the business analysts. This brings together the promise of less IT involvement while still maintaining the control needed by IT. There is also support for collaborative workspaces, which ensures that all people involved in the process creation work from the same set of resources.

### **ActiveVOS Central**

This is a browser-based application in which end users can manage tasks, requests, and reports. The tasks are part of a running business process that requires human interaction. Requests are forms that can be submitted to the server to start a new instance of a deployed business process.

This is another strength of ActiveVOS in Ovum's opinion, as it removes the artificial barrier between system-centric and human-centric process creation and management. This has additional empowerment by the inclusion of BI and BAM functionality to help create an environment that supports the decision-making aspect of BPM.

### **ActiveVOS Screenflow**

This is a platform for designing and publishing a specific application type, namely one that is designed to guide users through a set of steps to arrive at a predefined outcome. This is achieved by using of "Guidance Trees" (a nomenclature coined by Active endpoints). The key to this technology lies in the existence of a predefined outcome, which differs from other process types that can have multiple outcome possibilities. By recognizing the difference between these process types, Active Endpoints has created a different environment in which the process has clearly defined immutable steps. These steps can then be translated into a selection list from which the user has to choose in order to progress the process to its outcome.

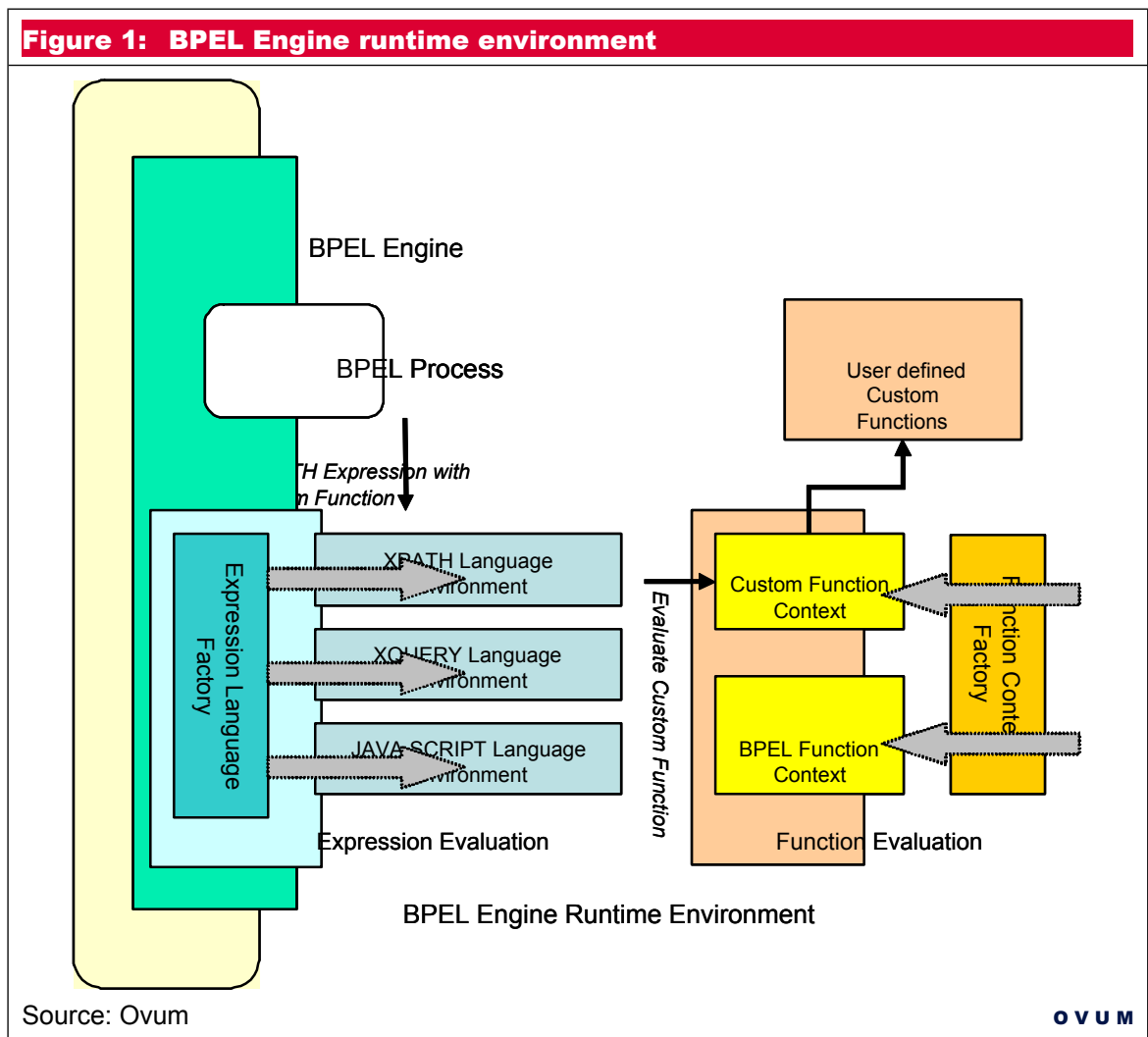
### **ActiveVOS Console**

This is a web-based management console that allows users to configure and manage the ActiveVOS process engine and all of its associated resources. It is a realtime management system that allows administrators to monitor events as they happen and recognize process bottlenecks whether they are system-based or due to process design inadequacies.

## Solution analysis

ActiveVOS renders valid BPMN 2.0 at all times, which executes as BPEL on the server. The two manifestations of the model, however, are always kept in sync. Active Endpoints strongly believes that a blended BPMN 2.0/BPEL approach represents a dramatically simpler and higher performing execution path than native BPMN 2.0 server execution.

Figure 1 shows the runtime environment.



The ActiveVOS process execution runtime adds little overhead to the execution time of services. ActiveVOS has demonstrated the ability to implement a non-persistent web service with a throughput of 90% of that of the same service implemented using Java. The ActiveVOS server is also designed to take advantage of the clustering capabilities of application servers, and when run within a clustered environment, in most cases throughput scales linearly with the number of machines in the cluster. ActiveVOS can also scale beyond a single cluster to take advantage of clusters running at multiple geographically dispersed locations. This approach to scaling also provides disaster recovery.

Processes can be guaranteed to remain available in the face of failures by individual machines by running the ActiveVOS server in a clustered environment. However, a single cluster cannot protect against a failure of an entire data center due to a disaster. ActiveVOS can run processes at two geographically dispersed sites. When both sites are operational they can both execute processes, so the throughput of the system is the combined throughput of both sites. However, if either of the sites fails, the other site takes over the execution of all of the processes.

## Market opportunity

Active Endpoints see four interrelated trends that will impact the BPM space. The company is addressing these with ActiveVOS:

- the consumerization of software
- the movement towards SaaS and cloud
- social
- mobile.

Although ActiveVOS maintains support for the more traditional BPM styles, there is added functional support that addresses these trends.

Consumerization, social, and mobile are setting the expectation that everything will be connected and easy to use. This philosophy is driving Active Endpoint's new products and enhancements to existing ones.





SaaS and Cloud requirements are guiding the introduction of Cloud Extend, a SaaS-based offering that allows business users to customize SaaS applications to suit their business needs. The first offering in this strategy is Cloud Extend for Salesforce.com.

## **Go-to-market strategy**

Active Endpoints maintains a 100% direct-sales model targeting both horizontal and vertical markets. However, it is particularly strong in financial services (including banking and insurance), public sector, defense, health/medical services, media and entertainment, and telecommunications.

ActiveVOS is designed for companies of any size and has customer implementations that range from 100 to 10,000+ employees. Development and project teams are the primary target, including software engineers, enterprise/software architects, project managers, and operations staff.

Outside of North America, Active Endpoints has a network of systems integrators that provide consulting support for customers that prefer a direct and local relationship. ActiveVOS sees many of its wins coming when projects using major alternatives have failed. This is due to a confluence of competitive factors. ActiveVOS strongly competes on ease of adoption and use, its broad support for standards, and its highly competitive pricing model.

Key implementation partners include Amdocs, Tech Mahindra, and Trask. Key technology partnerships include IBM, Oracle, and Red Hat.

# IMPLEMENTATION

## Implementation and deployment options

Table 2 shows the various deployment options available.

<b>Table 2: Deployment options</b>			
<b>Typical deployment scenario</b>	<b>Average implementation time (days)</b>	<b>Number of internal and external resources (FTEs) required</b>	<b>Typical in-house skills required</b>
pilot project	<30	1	Basic familiarity in concepts such as BPMN, Web Services, XPath, and XQuery.
30 users, departmental	<90	Varies depending on scope	Varies depending on scope
500 users, enterprise wide	<90	Varies depending on scope	Varies depending on scope

Source: Active Endpoints OVUM

Professional deployment support deliverables include custom architecture and design, mentoring, and implementation services to help customers build business process automation solutions.

Active Endpoints' professional services team customizes offerings based on specific client needs. It works with customers to define the scope of the application and plan the project and its deliverables to implement the solution on time.

Active Endpoints also offers a packaged "QuickStart program" in addition to custom offerings. QuickStart is a five-day program that dedicates an Active Endpoints consultant to empower knowledge transfer. Mentoring is a key focus of QuickStart. Working together with the customer, Active Endpoints identifies a project that can be accomplished within the engagement period. It guides the customer through the modeling, design, and implementation of the composite business application or a proof of concept that incorporates services and human activities and on-event processing. In addition, it can work with the customer to explore the ActiveVOS Reporting Framework, which makes it possible to create custom activity monitoring reports and analyze

trends. The goal is to enable the customer to complete the application independently, or provide what is needed to get the customer started on the first project.

In order to use ActiveVOS to its best advantage, model designers should be familiar with BPMN and model implementers should be familiar with web services, XQuery, and XPath. Although ActiveVOS uses BPEL and WS-Human Task, a detailed knowledge of these is not required.

ActiveVOS can be used without specific training; however, the company offers a variety of on-site and web-based training options. Classes range from one day to four days and include product training, technology, and standards training.

- The one-day Concepts and Capabilities online workshops use a series of instructor-led, hands-on exercises covering the business process lifecycle from process model design through development, deployment, and monitoring.
- ActiveVOS Fundamentals is a four-day online course designed for new users of ActiveVOS. Each day consists of live demonstrations and hands-on labs covering the basic skills needed to be productive with planning, developing, testing, deploying, and monitoring business processes.

The ActiveVOS Designer is available on Microsoft Windows XP and later, as well as Linux (Red Hat, Suse, and Ubuntu – support for Eclipse 3.4.1 required). The ActiveVOS Server is supported on Microsoft Server 2003 and 2008 and Linux types that support the JVM application and any RDBMS supported by ActiveVOS, Solaris 10 (x86/SPARC), AIX 5.3, and HP-UX 11v3.

RDBMS support is for MySQL 5.x, Microsoft SQL Server 2005 and 2008, Oracle 10g and 11g, and IBM DB2 9.x.

## Deployment examples

### Tele2

Tele2 is headquartered in Stockholm, Sweden and offers mobile communication services, data network services, fixed broadband and telephony, cable TV, and content services. The problem faced by Tele2 was that its open source account provisioning system could not keep pace with its rapid growth.

Tele2 selected ActiveVOS to integrate its core billing and provisioning applications via web services. The solution consisted of an ActiveVOS server cluster that was placed in one of two central European data centers. The ActiveVOS cluster was connected via web services to a JMS

queue, which in turn was connected to a multitude of back-end systems. Tele2's IT team used the ActiveVOS graphical designer to model, test, and deploy the fixed-line provisioning process.

ActiveVOS now spans 20 integration projects, 50 business processes, and hundreds of web services.

## **EFOS**

EFOS is a Slovenian-based solution provider that specializes in the field of environmental and food safety. It develops, implements, and maintains solutions that are in daily use by thousands of veterinarians and farmers. EFOS solutions include animal electronic identification, animal registration and movement tracking, e-farm books, and veterinary information systems. These solutions are mainly used for monitoring and controlling disease outbreaks in order to protect the integrity of the human food chain.

EFOS implemented its Veterinarian Information System (VIS) based on ActiveVOS. The solution automated data collection and transportation via PDAs, web services, and Internet applications. This approach did not introduce any new working procedures; however, data management was changed drastically. ActiveVOS was used to model the data collection and exchange process, improving the data quality.

## **An alliance of European banks**

An alliance was established to promote the interests of shareholder banks in areas where the individual banks are too small to have access to satisfactory solutions and/or terms. By operating on a collective basis, the alliance strives to ensure that its shareholder banks can offer all the products prospective customers expect from a modern bank and remain competitive in the market.

The Alliance operated with standalone systems in each unit that shared information by traditional means. This created a situation in which this sharing was slow, error prone, and costly, and lacked visibility. There was a need to work with 10 backend/legacy systems, five cloud-based systems/SaaS endpoints, and five public registry services.

ActiveVOS was the selected BPM infrastructure across all business units. Ongoing implementations for several business processes focused on order-to-cash, sales, and customer service processes. Each business integration process took four to six weeks. The implementation created singular common processes across various product units and service areas, enabling optimized customer service handling (e.g. total customer view) and unified sales and order management with the realization of upselling/cross-selling potential.



### Swiss insurance company

A leading Swiss insurance company with 1.5 million customers had built a broad base of siloed applications and partner interactions over the years. This resulted in growing labor costs and inefficient response times.

Building on ActiveVOS, the company not only delivered the flexibility and gained the visibility necessary for IT to quickly adapt to its changing business requirements, but also significantly reduced both the project implementation period and the project budget. The company saved 150 developer days of effort and significant license fees compared with project plans based on the incumbent vendor's stack approach. Additionally, it owns a scalable solution based on standards that it is able to reuse across the enterprise.

<b>Table 3: Active Endpoints, Inc. contact details</b>	
Active Endpoints, Inc. 230 Third Avenue 3rd Floor Waltham, MA 02451 US <a href="http://www.activevos.com">www.activevos.com</a>	
Source: Active Endpoints, Inc.	



## **APPENDIX**

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### **Ovum Consulting**

We hope that this analysis will help you make informed and imaginative business decisions. If you have further requirements, Ovum's consulting team may be able to help you. For more information about Ovum's consulting capabilities, please contact us directly at [consulting@ovum.com](mailto:consulting@ovum.com).

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