

March 14, 2008

# The Forrester Wave™: Identity And Access Management, Q1 2008

by Andras Cser  
for Security & Risk Professionals



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Oracle Emerges As Leader, With IBM, Sun Microsystems, Novell, And CA Close Behind

by **Andras Cser**

with Jonathan Penn, Paul Stamp, and Allison Herald

### EXECUTIVE SUMMARY

Forrester evaluated leading identity and access management (IAM) vendors across 117 criteria and found that Oracle has established itself as the IAM market Leader due to its solid technology base across the IAM landscape and its compelling, aggressive strategy around what it refers to as application-centric identity. IBM, Sun Microsystems, CA, and Novell are all Strong Performers. They each have some top-notch products, but they also face a few fundamental technological shortcomings across their IAM portfolios; plus, they lack the attention to all the key areas of development and utilization of IAM solutions. BMC Software has failed to keep pace with competitors on functionality, which has hindered market execution, and it is best suited for organizations with a provisioning focus that are already looking to BMC for business service management (BSM) solutions.

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Forrester conducted lab-based evaluations in December 2007 and interviewed at least three vendor and user companies, including BMC Software, CA, IBM, Novell, Oracle, and Sun Microsystems.

#### Related Research Documents

["Identity Management Market Forecast: 2007 To 2014"](#)

February 6, 2008

["Trends 2006: Identity Management"](#)

February 14, 2006

["The Forrester Wave™: User Account Provisioning, Q1 2006"](#)

January 30, 2006

## IDENTITY AND ACCESS MANAGEMENT DELIVERS SECURITY WITH STRONG BUSINESS VALUE

The identity and access management (IAM) market consists of several types of technologies existing as individual products or product components that work together to:

- **Establish a coordinated identity data infrastructure.** This segment encompasses products that form the identity information layer itself: directories, metadirectories, and virtual directories.
- **Administer users' accounts and privileges.** Products that manage users' accounts, attributes, and credentials include provisioning, role management, password management, and privileged user management.<sup>1</sup> This category also includes the functional elements of self-service and delegated administration.
- **Control users' access to IT resources.** Coordinating users' access to multiple applications is the domain of products like enterprise single sign-on (E-SSO), Web single sign-on (Web SSO), and federation.<sup>2</sup> It also includes the emerging area of entitlement management.
- **Audit both related administrative and access activities.** Organizations require the ability to demonstrate that account administration and access controls are performing according to policy; identity audit products help with this effort. This includes auditing tools that combine and correlate activities and events across the identity infrastructure, as well as privilege attestation tools to help certify that the privileges associated with a user are correct. It also includes role management products, which serve a dual role of both codifying policies and validating their enforcement.

While regulatory compliance and security rank among the main drivers behind identity and access management implementations, companies are quickly realizing that IAM projects touch on almost every aspect of business. In fact, organizations with clear definitions of business processes and enterprise roles are much quicker to achieve business results with IAM.

### Fragmentation Persists, But IAM Is A Coalescing Market

The IAM market landscape reflects its history. Each of the product areas started as separate markets, in many cases created to solve quite different needs and often sold to different people in the enterprise.<sup>3</sup> As vendors began to recognize the fundamental role that identity plays in the entire IT ecosystem, they began to acquire and develop IAM solutions to extend their core business strategies. This created the environment that we have today, where:

- **Pure plays and specialists continue to dot the field.** Even in relatively mature IAM segments, such as provisioning or directory, there remain focused players, such as Courion, Siemens, Fischer International, M-Tech Information Technology, Avatier, and Radiant Logic. E-SSO and

privileged user management vendors like Passlogix, ActivIdentity, Citrix Systems, Imprivata, Encentuate, and Sentillion continue to thrive. Identity federation point-product vendors include Symlabs and Ping Identity. The definition of the IAM market itself continues to expand, and the most recent areas of growth are in identity audit and role management. Here, vendors like Aveksa, SailPoint Technologies, BHOLD, Eurekify, Proginet, and NetVision have been establishing themselves. The closely related strong authentication market remains a vibrantly diverse product segment with dozens of vendors.

- **Major system management players see IAM as a core function.** BMC, CA, and IBM see IAM as an extension of their systems and business services management strategy. The latest incarnation of Information Technology Infrastructure Library (ITIL) specifications incorporates IAM as a key element in delivering business-oriented performance.
- **Application platform vendors are turning to IAM for improved service delivery.** Novell, IBM (which straddles both the application platform and systems management areas), Oracle, Microsoft, SAP, and Sun all view IAM as a set of infrastructure services that support applications and application platforms.

## OUR EVALUATION CRITERIA PUT THE SPOTLIGHT ON IAM PORTFOLIO INTEGRATION

To assess the state of the IAM market and see how the vendors stack up against each other, Forrester evaluated the strengths and weaknesses of top IAM vendors. In a reflection of changing market demands and dynamics, we deliberately did not look at any single product; instead we looked at how several key IAM products — provisioning, Web SSO, and federation — worked together in a cohesive fashion and at what other IAM products the vendors brought to the table. We focused not on products themselves but on functionality transcending products, seeking to test how seamlessly capabilities such as workflow, role management, and delegated administration are integrated and unified across products.

### Evaluation Criteria: Current Offering, Strategy, And Market Presence

After examining past research, user need assessments, and vendor and expert interviews, we developed a comprehensive set of evaluation criteria. We evaluated vendors against 117 criteria, which we grouped into three high-level buckets:

- **Current offering.** To assess product strength, we evaluated each vendor offering against eight groups of criteria: initial setup and system integration, data management, delegated administration and self-service, access management, workflow/business process modeling, policy and role management, auditing and reporting, and architecture. We complemented this analysis with feedback from customer references.
- **Strategy.** We reviewed each vendor's IAM strategy and its ability to meet future market demands and deliver the highest value for customers. To do this, we evaluated each vendor against three groups of criteria: identity management vision, breadth of identity management

solutions, and system integrator (SI) partnerships. We also looked at pricing, provided here for informational purposes only.

- **Market presence.** To establish a vendor's market presence, we examined several configurations of its IAM install base, and we examined the company's revenue and growth, both overall and for IAM specifically.

### Evaluated Vendors Must Meet Product, Revenue, And Recognition Criteria

Forrester included six vendors in the assessment: BMC Software, CA, IBM, Novell, Oracle, and Sun Microsystems. Each of these vendors has (see Figure 1):

- **A rich IAM portfolio.** These vendors own (they do not original equipment manufacturer [OEM] or resell) IAM products in the core areas of provisioning, Web SSO, and federation.
- **Established a depth of market penetration.** These vendors have IAM product revenues that exceed \$25 million (excluding related implementation services). Strong authentication products and related revenues are not included in these calculations.
- **Established a breadth of market penetration.** These vendors have more than one IAM product to which they can attribute \$10 million in revenue or have \$20 million in revenue attributable to an IAM suite.

We also only included those vendors that have established market awareness among Forrester's enterprise client base. Forrester clients must regularly mention vendors in our Inquiry or consulting discussions.

We invited Hewlett-Packard (HP) to participate, but it declined to do so. HP reported that it has decided to focus its investment in identity management products exclusively on existing customers and not on pursuing additional customers or market share.

Microsoft, a significant and influential vendor in the overall IAM market, is not included in this evaluation. This is due to Forrester's requirements for the lab-based evaluations (the nature of which are reflected in the qualifying criteria). Specifically, Microsoft's Web SSO capabilities in Active Directory Federation Services (ADFS) lack some user administration and access management features required for performing the lab-based scenarios on which our functional evaluations were based. Microsoft does have plans to enhance its portfolio so as to extend its IAM capabilities in these areas.

**Figure 1** Evaluated Vendors: Product Information And Selection Criteria

<b>Vendor</b>	<b>Product evaluated</b>	<b>Product version evaluated</b>	<b>Date evaluated</b>
BMC	BMC Identity Management Suite	5.5	December 2007
	BMC Web Access Manager	5.5	December 2007
	BMC Identity Compliance Manager	5.5	December 2007
	BMC Identity Web Access Manager	5.5	December 2007
	V-GO Single Sign-On for CONTROL-SA by Passlogix	5.5	December 2007
CA	CA Identity Manager	r8.1 SP2	December 2007
	CA SiteMinder Web Access Manager	6.0 SP5	December 2007
	CA SiteMinder Federation Security Services Endpoint	6.0 SP5	December 2007
	CA Single Sign-On	r8.1 SP2	December 2007
IBM	IBM Tivoli Identity Manager	4.6	December 2007
	IBM Tivoli Access Manager for eBusiness	6.0	December 2007
	IBM Tivoli Federated Identity Manager	6.1	December 2007
	IBM Tivoli Access Manager for Enterprise Single Sign-On	6.0	December 2007
Novell	Novell Identity Manager and Roles-Based Provisioning Module	3.5.1	December 2007
	Novell Access Manager	3	December 2007
	Novell SecureLogin	6.1	December 2007
Oracle	Oracle Identity Manager	10.1.4	December 2007
	Oracle Access Manager	10.1.4	December 2007
	Oracle Identity Federation	10.1.4	December 2007
	Oracle Enterprise Single Sign-On Suite	10.1.4	December 2007
	Oracle Role Manager	2.8	December 2007
	Oracle Adaptive Access Manager	10.1.4	December 2007
Sun	Sun Java System Identity Manager	7.1	December 2007
	Sun Java System Access Manager	7.1	December 2007
	Sun Java System Federation Manager	7.1	December 2007

Source: Forrester Research, Inc.

**Figure 1** Evaluated Vendors: Product Information And Selection Criteria (Cont.)

**Vendor selection criteria**

**A rich IAM portfolio.** The vendor must own (not OEM or resell) IAM products in the core areas of provisioning, Web SSO, and federation.

**Established a depth of market penetration.** The vendor must have IAM product revenues that exceed \$25 million (excluding related implementation services). Strong authentication products and related revenues are not included in these calculations.

**Established a breadth of market penetration.** The vendor must have more than one IAM product to which they can attribute \$10 million in revenue or have \$20 million in revenue attributable to an IAM suite.

Source: Forrester Research, Inc.

**ORACLE GAINS A TENUOUS LEAD IN A COMPETITIVE AND DYNAMIC MARKET**

The evaluation uncovered a market in which (see Figure 2):

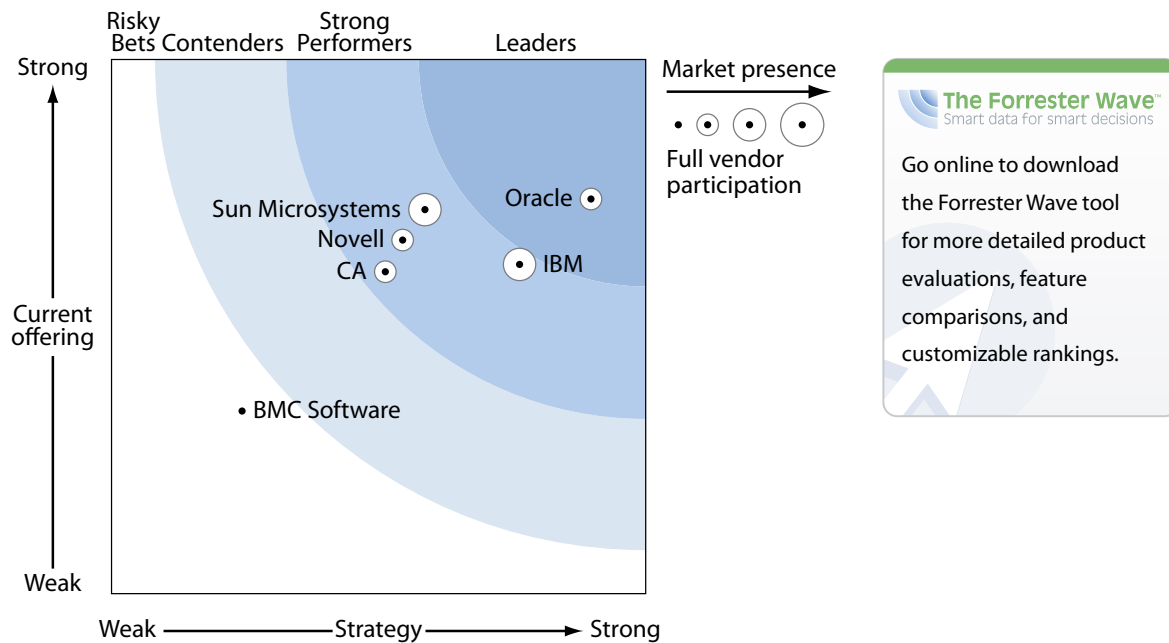
- **Oracle has established itself as Leader.** Oracle has been ambitiously dedicating a great amount of resources to aggressively building a versatile and well-rounded IAM product line. In addition to Oracle Identity Manager (OIM) and Oracle Access Manager (OAM), its recent acquisition and integration of role management (Bridgestream/Oracle Role Manager [ORM]) and risk-based authentication (Bharosa/Oracle Adaptive Access Manager [OAAM]) products will help Oracle position its IAM product set as the identity services foundation for all Oracle eBusiness products. This proliferation will give Oracle access to previously unexploited markets. For example, we already see Oracle reaching into the small enterprise space more successfully than similar-size competitors. ORM's advanced temporal role versioning and native support for multidimensional organizations and OAAM's easy-to-use multifactor and adaptive, risk-based authentication and fraud detection propel Oracle in front of the competition on functionality. Meanwhile, Oracle's focus on extending IAM from a security and systems management discipline to one of application architecture and development fuels its strategic leadership.
- **Strong Performers IBM, Sun, Novell, and CA offer attractive, competitive options.** Each of these vendors have strong product capabilities, a track record of delivering value to customers, and attractive development plans. However, each had noticeable areas that called for fundamental improvement. IBM's reviewed Tivoli Identity Manager (TIM) 4.6 requires extensive scripting for policy and workflow definitions and Tivoli Directory Integrator knowledge for connecting certain endpoints, and it has no support for nested roles. IBM customer references also cited relatively high needs for product customization when implementing IBM's solutions. Meanwhile, Sun's central configuration management of endpoint plug-ins in the Java System Access Manager is fairly cumbersome. Although the Java System Identity Manager is a leading edge provisioning product, now to be integrated with Vaau's

RBACx, some provisioning rule definitions require XML coding in a thick graphical user interface (GUI). Novell's policy management and delegated administration are split into two applications — which may be an inconvenience in large deployments. The Designer (thick client GUI) is for policy management, workflow design and simulation, and documentation. The iManager (Web GUI) allows administrators to manage day-to-day operations. The Novell provisioning product uses the Identity Vault central identity repository, which has eDirectory at its core. CA has a leading Web SSO product with SiteMinder, but its Identity Manager still carries the burden of the legacy CA Admin provisioning engine, while only supporting CA Directory for the global user store.

- **BMC lags significantly, making it a Risky Bet for many strategic investors.** BMC has failed to keep its IAM portfolio up to date, and administration remains fragmented. This highlights the fact that integration of acquisitions and attempts at modernizing core IAM elements remain incomplete. For example, setting up a right for the delegated administrator and actually creating the delegated administrator require accessing two interfaces of the provisioning product. BMC does not support user ID recovery out of the box, and the vendor was not able to demonstrate self-enrollment. The Web SSO product does not provide a separate component for the policy decision point, instead the policy enforcement point queries the user repositories.

This evaluation of the IAM market is intended to be a starting point only. Readers are encouraged to view detailed product evaluations and adapt the criteria weightings to fit their individual needs through the Forrester Wave™ Excel-based vendor comparison tool.

**Figure 2** Forrester Wave™: Identity And Access Management, Q1 '08



Source: Forrester Research, Inc.

**Figure 2** Forrester Wave™: Identity And Access Management, Q1 '08 (Cont.)

	Forrester's Weighting	BMC Software	CA	IBM	Novell	Oracle	Sun Microsystems
<b>CURRENT OFFERING</b>	50%	1.69	2.99	3.06	3.29	3.67	3.57
Initial setup and system integration	10%	2.50	2.40	3.40	3.30	3.60	3.40
Data management	10%	1.45	2.85	3.10	4.45	4.40	4.40
Delegated administration and self-service	15%	1.10	4.10	2.75	2.55	4.25	4.00
Access management	10%	1.75	3.80	2.90	2.55	3.60	1.70
Workflow/business process modeling	10%	1.90	2.55	3.45	3.45	3.70	3.50
Policy and role management	10%	1.40	2.10	2.25	2.15	3.10	3.75
Auditing and reporting	5%	2.20	1.95	4.00	3.30	2.10	3.30
Architecture	15%	1.65	2.95	3.75	3.80	3.80	3.45
Customer references	15%	1.80	3.10	2.50	3.90	3.45	4.10
<b>STRATEGY</b>	50%	1.22	2.56	3.82	2.72	4.49	2.93
Identity management vision	35%	1.70	3.00	3.00	1.70	5.00	3.00
Breadth of identity management solutions	30%	0.90	2.70	3.40	2.40	3.30	1.60
Pricing cost scenario	0%	0.00	0.00	0.00	0.00	0.00	0.00
System integrator (SI) partnerships	35%	1.00	2.00	5.00	4.00	5.00	4.00
<b>MARKET PRESENCE</b>	0%	0.68	2.91	3.04	2.33	2.56	3.21
Installed base	60%	0.50	3.00	3.00	3.00	2.00	3.25
Revenue	40%	0.95	2.78	3.10	1.33	3.40	3.15

All scores are based on a scale of 0 (weak) to 5 (strong).

Source: Forrester Research, Inc.

## VENDOR PROFILES

### Leaders: Oracle Offers Broad And Unique Value

- **Oracle.** Oracle has dedicated an ambitious and knowledgeable team to developing the IAM suite. Oracle reached the top of our evaluation through a combination of the breadth, depth, interoperability, and packaging of its IAM features alongside the strategy and current state of market execution on its application-centric identity vision. Oracle's identity management platform has excellent enterprise role management capabilities. Functionality-rich connectors and a special staging area for intermediary data transformations allow for flexible data transformations. Oracle has retired all user management and workflow functionality features in OAM, and it plans to unify all such functionality, along with reporting and auditing, as a set of common services. The product directly supports rollback functions through Oracle's Total Recall feature, in addition to having workflow-enabled connections to endpoints. There is a wide array of options for detecting and dealing with orphaned accounts. Oracle's provisioning

policy definition supports wildcards and nested roles. OAM natively supports chainable and pluggable authentication schemes, flexible policy design, and native multifactor authentication using OAAM. Oracle licenses Passlogix's E-SSO solution in an OEM agreement and integrates it with OIM for Windows-based password self-service. Although not part of the lab evaluation, Oracle demonstrated very strong capabilities with the upcoming Fine Grained Authorization (FGA) and OAAM integration, which it plans to merge with OAM. Areas for improvement include consolidation of login screens, and even tighter integration between components such as ORM and OIM, as well as OAAM and OAM. Some customers expressed difficulties with upgrading the product, requiring the users to follow a very specific, sequential upgrade path.

### Strong Performers: IBM, Sun, Novell, And CA Deliver A Rich Portfolio Of Products

- **IBM.** IBM excels with the depth and breadth of its IAM solutions, which in some cases extend beyond pure identity management: IBM TIM has excellent integration with SAP (both portal and enterprise resource planning [ERP]), Approva, and its own Compliance Insight Manager (formerly Consul). The TIM workflow designer is an integral part of the Web GUI, allowing system administrators to assign a comprehensive set of administrative rights to workflow design. IBM's performance estimator solution provides outstanding solution-sizing capabilities. Documentation is fragmented and highlights the need for a services-led integration. System integrators (including IBM's own Global Services) have fairly deep experience with TIM and Tivoli Access Manager (TAM) implementation. Customer references expressed difficulties and project timeline extensions when implementing and adapting technical functionality of the product to their business requirements, but they were eventually successful in realizing business value from product deployment. Although not part of the current Forrester Wave evaluation, with TIM 5.0, IBM has achieved great elevation gain with facilitating an easier product installation and configuration process through the use of wizards.
- **Sun Microsystems.** Sun's provisioning capabilities are extremely flexible. All events in the product can trigger workflows, which helps Sun Identity Manager meet very demanding customer requirements with minimal customization. The product supports a comprehensive role and administrative rights assignment framework for delegated administrators and — thanks to a sparse data model in the central identity repository — advanced identity auditing and reporting capabilities, allowing for real-time reporting on endpoint information. Although provisioning rule design requires Extensible Markup Language (XML) programming knowledge, the product provides substantial capabilities to check these rules. Sun's Access Manager solution falls short in the areas of centralized configuration management, policy definition, and adaptive authentication. Generally, the breadth of Sun's IAM portfolio is short of competitors Oracle and IBM (lacking E-SSO, identity audit, privileged user management, and entitlement management), and Sun has not yet fully implemented its open source strategy across the board of IAM products. Sun needs to focus on enhancing ERP connector capabilities and integrating audit log management systems more tightly with its products. Although the talent pool on the market for Sun's IAM skills is fairly rich, Sun has lost its exclusivity or elite status with SI partners, especially to Oracle.

- **Novell.** Novell fared well in several of the functional areas of evaluation; although it established leadership in the data management, auditing and reporting, and architecture criteria sets, it trailed in delegated administration and self-service, as well as in policy and role management. Strengths in data management highlight the product's pedigree in Novell's eDirectory technology and Identity Manager's roots in metadirectory-based provisioning. Unfortunately, this causes the provisioning product to be dependent on eDirectory, which is one of the factors contributing to a skills gap that organizations often face and a need to bridge when selecting Novell for IAM. Subscriber and publisher channels allow flexible data transformations to and from target systems with many data transformation features and points of customization. A very nice GUI shows data flows and installed filters, and Novell's unique event-driven architecture guarantees transactional integrity. Novell's IAM environment has extensive integration with Sentinel, which enables fine-grained policy detection and enforcement in areas such as segregation of duties (SoD). Some workflow and some policy design are only available from the thick client Novell Designer GUI interface.
- **CA.** CA's versatile SiteMinder shares policies with Identity Manager's delegated administration functionality, the service-oriented architecture access management system (SOA Security Manager), and SiteMinder Federation. Identity Manager's administrative model currently provides preventive — but not detective or corrective — SoD management, a missing feature that will be present in CA's forthcoming Security Compliance Manager. CA needs to eliminate the dependency on the legacy CA Admin and CA Directory and continue the infrastructure-vendor-agnostic approach that SiteMinder has always represented. To remain competitive in the market of integrated entitlement management solutions, CA needs to integrate its separate Enterprise Entitlement Manager into its overall IAM portfolio. Although CA SiteMinder is still a formidable competitor for any Web SSO implementation, it is limited in its ability to chain independent pluggable authentication modules — a cornerstone feature for adaptive authentication. Customer references expressed concerns around 1) the scalability of CA Identity Manager's policies for large deployments and 2) CA's continuing ability to support its IAM products, as they witnessed a decline in technical support engineers expertise level.

### Risky Bets: BMC Provides A Capable Foundation But Falls Short On Execution And Direction

- **BMC Software.** BMC has an excellent ITIL and Business Service Management message, appealing to many large enterprises. The IdM Suite has great trending of compliance data available without any additional component installation. While BMC has the most mature provisioning product on the market, the company has failed to update it sufficiently to retain its competitive positioning. The delegated administration is fairly cumbersome and requires switching between the Windows 32 legacy GUI (ESS) and the Web GUI front end. The Web SSO product lacks a central policy decision point/server, making it unsuitable for enterprise-grade deployments. BMC also needs to dedicate internal resources to developing its professional services offerings for identity management.

## SUPPLEMENTAL MATERIAL

### Online Resource

The online version of Figure 2 is an Excel-based vendor comparison tool that provides detailed product evaluations and customizable rankings.

### Data Sources Used In This Forrester Wave

Forrester used a combination of three data sources to assess the strengths and weaknesses of each solution:

- **Hands-on lab evaluations.** Vendors spent one day with a team of analysts who performed a hands-on evaluation of the product using a scenario-based testing methodology. We evaluated each product using the same scenario(s), creating a level playing field by evaluating every product on the same criteria.
- **Vendor surveys.** Forrester surveyed vendors on their capabilities as they relate to the evaluation criteria. Once we analyzed the completed vendor surveys, we conducted vendor calls where necessary to gather details of vendor qualifications.
- **Customer reference calls.** To validate product and vendor qualifications, Forrester also conducted reference calls with at least three of each vendor's current customers.

### The Forrester Wave Methodology

We conduct primary research to develop a list of vendors that meet our criteria to be evaluated in this market. From that initial pool of vendors, we then narrow our final list. We choose these vendors based on: 1) product fit; 2) customer success; and 3) Forrester client demand. We eliminate vendors that have limited customer references and products that don't fit the scope of our evaluation.

After examining past research, user need assessments, and vendor and expert interviews, we develop the initial evaluation criteria. To evaluate the vendors and their products against our set of criteria, we gather details of product qualifications through a combination of lab evaluations, questionnaires, demos, and/or discussions with client references. We send evaluations to the vendors for their review, and we adjust the evaluations to provide the most accurate view of vendor offerings and strategies.

We set default weightings to reflect our analysis of the needs of large user companies — and/or other scenarios as outlined in the Forrester Wave document — and then score the vendors based on a clearly defined scale. These default weightings are intended only as a starting point, and readers are encouraged to adapt the weightings to fit their individual needs through the Excel-based tool. The final scores generate the graphical depiction of the market based on current offering, strategy, and market presence. Forrester intends to update vendor evaluations regularly as product capabilities and vendor strategies evolve.

## ENDNOTES

- <sup>1</sup> Smaller enterprises (those with 1,000 to 5,000 employees) are an underserved market when it comes to user account provisioning. They are large enough to benefit from the efficiencies and controls that the technology provides, but they are not large enough to be able to justify the customization and integration efforts so often associated with provisioning. Success is attainable, and it comes from a keen focus on project scope. Right-size your provisioning project by securing the appropriate level of organizational support, spending enough time on business process redesign and role design, and consolidating user repositories at every stage. This will ensure that you realize your expected return on investment (ROI) more quickly. See the August 20, 2007, "[User Account Provisioning For The Midmarket](#)" report .
- <sup>2</sup> Federated identity is a topic of widespread interest — yet the level of interest outpaces the market's embrace of the technology. Federation's currently low adoption rate is indicative of process and technology issues: difficulties in forming many-to-many trust relationships, incompatible protocols, and performance problems. Widespread adoption of federation will not happen before 2009, but keep your eye on industry developments such as OpenID, Bandit, Project Concordia Microsoft's ADFS, and digital identities issued by governments. See the September 27, 2007, "[The State Of Federation](#)" report .
- <sup>3</sup> Identity management has successfully thrived amid IT and business change precisely because of its composite nature in both products and benefits. Even after years of healthy adoption rates, the IAM market is actually just beginning its trajectory toward broad adoption and deep penetration. Forrester projects that the IAM market will grow from nearly \$2.6 billion in 2006 to more than \$12.3 billion in 2014. See the February 6, 2008, "[Identity Management Market Forecast: 2007 to 2014](#)" report.

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