



IaaS - Infrastructure-as-a-Service - Hosting  
PaaS - Platform-as-a-Service - Development  
SaaS - Software-as-a-Service - Delivery

# Successful Platform-as-a-Service Requires a Supporting Ecosystem for HR Applications

Platform-as-a-Service is the computing term used to describe a hosted web-based computing environment and the associated services for developing and delivering software applications. A platform takes care of development infrastructure, including hardware and operating systems, and includes database management, security, storage, application versioning, testing, and provides hosting facilities for deploying business applications. Everything is delivered over the Internet so all the developer needs is access to a browser and they are able to build their own enterprise applications. Application development has never been more simple or available to so many potential developers.

There are numerous platform providers on the market today, including Microsoft Azure and Google App Engine, but the platform that is most suitable for end user development is Salesforce.com's Force.com product. What started out as a customer relationship management system that allowed the user community to build custom extensions to the product quickly evolved into a development platform that went beyond CRM applications to accommodate any enterprise application.

## Business Applications

Early adopters to the Force.com development platform mainly built utility applications then followed the financial applications. Salesforce.com's development lab built several applications to give developers a walk up start. They also partnered with Unit4 to develop the FinancialForce accounting application with a modularized approach to system development. The first HR applications to appear on Salesforce.com's application market, the AppExchange, were recruitment and talent management applications. In 2006 the Salesforce.com lab listed the Employee Manager downloadable package that included employee details, performance reviews, paid time off requests, job functions and salary history. The package was unsupported, which meant anyone that downloaded the package were able to do what they like with it but Salesforce.com did not have any ongoing responsibility for delivering future versions or maintaining control over user development. In 2011 HR Cloud Solutions released their HCM Mashup Builder product similar to the Employee Manager but included much more functionality and developers are supported by an HR application ecosystem.

Salesforce.com has a massive client base, especially in the USA, but very few HR applications built exclusively on the Force.com platform have emerged. The reason is most companies that signed up for a SaaS (Software-as-a-Service) are committed to their supplier and have already been through an extensive HR system evaluation process and are not in the market for a substitute and do not understand the role a development and delivery platform plays in their HR system architecture. Ironically, the companies that were slow to move to cloud computing or adopt SaaS system are now better positioned to take advantage of the PaaS solution. That does not mean they cannot still select a SaaS application, it means they are now able to integrate the SaaS system of record into their overall system architecture and take advantage of the application platform to plug-in additional products or build custom extensions within their integrated platform.

## Composition of an Ecosystem

In order to be successful the PaaS solution must be supported by an ecosystem that helps clients identify what product or product mix best suits their organization's HR system needs, what is the functional gap, how will the gap be solved, how will they be integrated into a cohesive system operation, and if a custom development option is chosen what pre-built components are available, and what code can be copied and pasted into their custom application. An ecosystem must contain entities to address those needs and has the ability to:

1. Define HCM solution requirements in absolute detail
2. Collect HCM product capability in absolute detail
3. Compare existing HCM product functional and technical capability against user requirements
4. Discover pre-built component products and reusable code for custom application development
5. Design a platform database layer consistent with the selection, component discovery and application development functions

The components of an ecosystem facilitate collaboration, publish products and services, and offer a component factory. The components may be supplied by one company or may involve multiple members of an HCM community.

## Common Questions and the Role of an Ecosystem

The following questions usually arise during the selection process for an HCM product and the answer describes how HR Cloud Solutions provides an ecosystem component:

Q. Is there an HCM product that meets most of my needs?

A. *HR Cloud Solutions (HRCS) provide a **consulting service** as part of the ecosystem to help clients define and weight in detail their HCM requirements (down to data level if they wish) using an online portal designed for a laptop, desktop or mobile device. Clients may collaborate with each other using the Chatter features of Salesforce.com to agree on requirements.*

Q. How do I know which other products are worth considering?

A. *HRCS use a **Best Fit Analyzer** to list in order of best fit the most suitable products based on the weighted requirements. The online drill down facility helps clients identify the functional capability of over 700 products in the **marketplace** database. The **component registry** records functional capability of Force.com components at the very detailed level. For example components that contain code that performs an operation such as filter candidates according to defined criteria can be plugged into an application to substitute the default code. Components can be easily found because they are catalogued according to the **common data model** structure and listed in the component registry, which becomes an HCM vertical marketplace within the AppExchange.*

Q. How do I know that I am comparing apples with apples when comparing HCM products?

A. *All product capability and all clients' specifications are based on a common template that defines the most common HCM features including data transactions, views and reports. The template is structured according to the **common data model** used by HRCS so that all comparisons are based on the same structure and criteria.*

Q. If one product doesn't meet all needs what other products must I have?

A. *As part of the best fit analysis HRCS identify down to data level the missing components arising from the selection of one product. The **gap analysis** process focuses on niche providers of specialty products and produces detailed reports identifying data overlaps and any micro gaps not filled.*

Q. What is the downside of integrating multiple products?

A. *HRCS makes clients aware of the issues associated with **integrating products** from multiple suppliers and maintaining multiple systems including system administration, common security access controls, dependency*

on key resources to manage legacy systems, data exchange between systems and data synchronization concerns.

Q. Is it possible to modify the selected products?

A. Assuming the product selected is not built on the Force.com platform HRCS makes clients aware of the costs associated with vendor methodology to define, program and deploy modifications or the limitation of SaaS products to offer client specific interfaces and data elements.

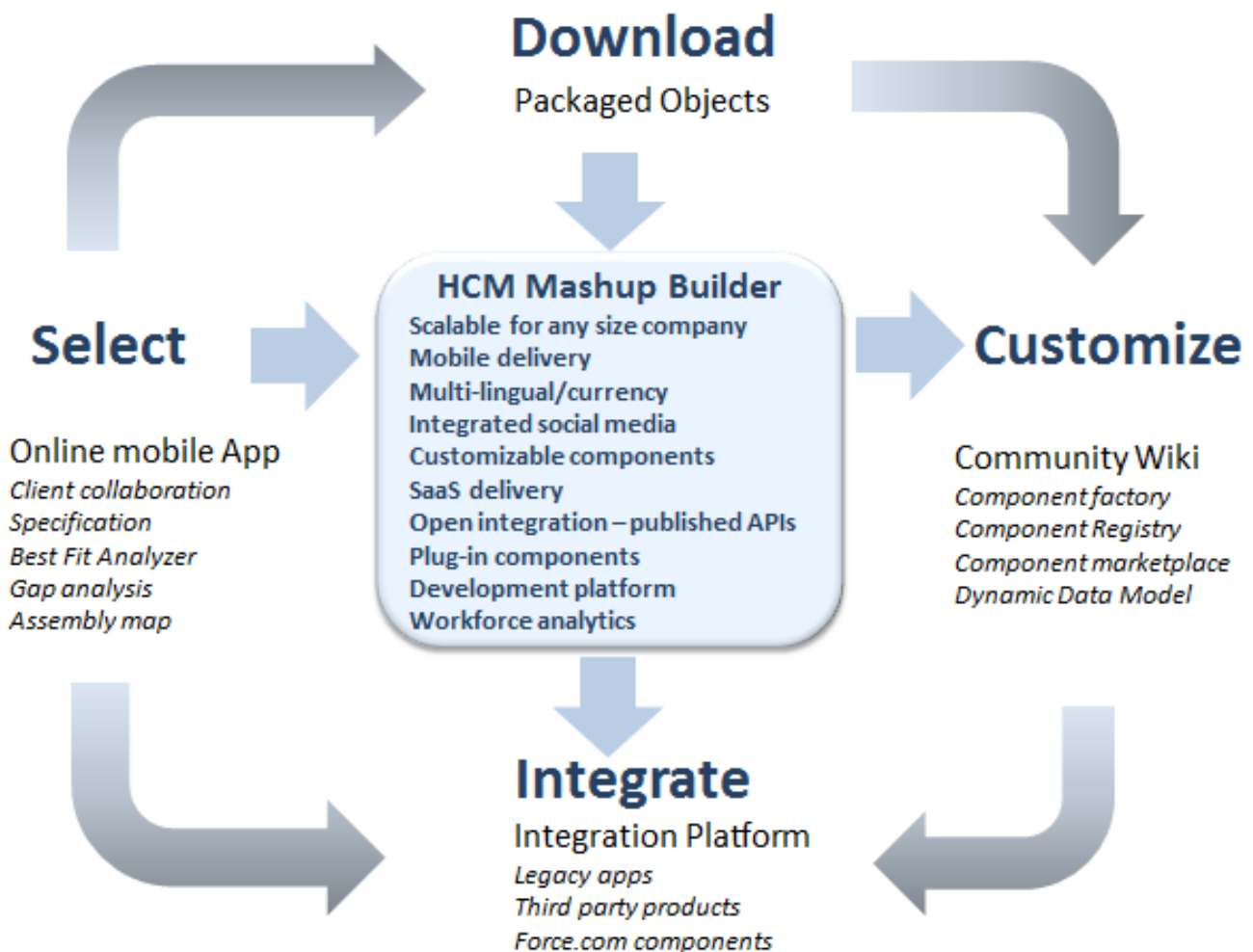
Q. Is it more cost effective to build my own custom solution?

A. HRCS examines the business case to build custom solutions based on uniqueness of requirements, size of the organization, importance of consolidated reporting, need for workflow, multi-lingual interface requirement, and likelihood of changing needs. HRCS offer a **packaged pre-built set of objects** to save up to 90% of development effort. The **HCM Mashup Builder** is an application framework, an integration platform and a data warehouse and is downloadable for clients to create their platform solution.

Q. Is there a source I can go to for code that someone else has developed and I can use?

A. HRCS provide a **component factory** to copy and paste code or picklist values. The factory uses the same HR business structure as the requirements specification tool and the vendor product information.

The following illustrates how the components of the ecosystem support the end-to-end process of selecting products or building custom solutions. The community wiki contains all of the development support features.



## Force.com Development & Ecosystem Status

Companies like Accenture and Deloitte have established Force.com practices and help clients build custom applications. Accenture offer their services based on a Cloud Application Factory, whereas Deloitte do not appear to offer any supporting ecosystem and have developed their practice around the standard Salesforce.com (Force.com platform) features.

The Accenture Cloud Application Factory includes a Suitability Survey to identify applications that are most suitable for migration to the Force.com platform, a Component Library that tracks application commonality to reduce development time and a SaaS Delivery Toolkit to manage applications, enhancements and upgrades. Accenture recognize the benefits of using a common framework to reduce development time and identify component reuse from their component library as another major benefit.

Salesforce.com operate the AppExchange for products and services supporting the Force.com platform and there is a large developer network ready to enhance custom built applications using the Apex programming language or the VisualForce product.

The following table illustrates the progress of HR Cloud Solutions' ecosystem compared to others in the market.

Company	Automated Component Discovery	Component Registry	HR Specific Application Framework	Component Factory	Integration Services	Published Common Data Model
HR Cloud Solutions	Yes (online)	Yes	Yes	Yes	Partners	Yes
Accenture	No (manual RFI)	No	Partial	Partial	Yes	No
Deloitte	No (manual RFI)	No	No	No	No	No

### Ecosystem Component Description

**Automated Component Discovery:** Is the automatic comparison of user requirements to functional capability of products in the marketplace. The alternate method is sending a Request for Information (RFI), or similar document, to potential suppliers.

**Component Registry:** A database or catalogue of HCM component product capability and listing of products in a structured fashion according to business function for easy discovery. The structure can be used by clients to build their internal component repository.

**HR Specific Application Framework:** The pre-built set of objects that may be installed on a client's Salesforce.com instance to accelerate the development process.

**Component Factory:** A source of information and development tools for component developers

**Integration Services:** A service that assists clients to join applications to the Force.com platform. The method may include Web services or File Transfer and may join applications from within the cloud or on premise. Applications may be written for the Force.com platform or other proprietary language.

**Published Common Data Model:** The most important component of any ecosystem is the common data model. It is the blueprint for system design and all other related component activities.

## Conclusion

HR Cloud Solutions lead the way in assisting clients to build HR applications on the Force.com platform by providing the supporting ecosystem. HR Cloud Solutions recognized the potential for HR end user development and the opportunities enabled by Platform-as-a-Service and then focused their attention and investment on building the supporting ecosystem.

Larger organizations are able to put more consultants on the ground in more countries around the world but they lack the supporting ecosystem that will enable developers to build their custom applications on the Force.com platform in a fraction of the time it will take others.

It is not inconceivable to see HR applications specified, assembled and delivered to the client within the same working day once the right ecosystem components are in place.

For more information about the ecosystem and critical components contact HR Cloud Solutions.

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