

# ANALYSIS OF SKILLS MANAGEMENT SYSTEMS

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## Abstract

*There are many software systems with skill management features. But they are complex systems, and also have many other features that are not related to skills management. The fact that many HR and ERP systems feature skills management suggests the real need of skills management software. Our research shows that we didn't find a specialized skills management system, which can be used as a web service, and also integrated with other systems.*

## 1. Introduction

Skills management systems are software systems that are used for management of information about members' skills in organizations. The systems of this kind cover several aspects of skills management:

- entering data that describes the skills of the members,
- overview of the members skills and generating reports,
- searching for members that match some criteria - a set of skills they should have,
- planning of future development of the members skills.

These features can be really useful in some organizations. The definitions and explanations of some phrases mentioned in the text are following next.

Web service is a system that executes some operations that are typically called and used from other systems on the web with HTTP communication.

Web services integration is a concept where the web services communicate with each-other, and operate together to accomplish some more complex operation.

„Plug in“ feature of a web service is the possibility of its easy integration with other web services.

## 2. Motivation

The skills management systems are often used in the organizations with a relatively big number of members. In such cases, a centralized storage of information about the skills of every member is necessary. This information is useful for selecting the

appropriate members to do some task, based on their skills and the required skills for the task.

These features, for storing information about the members' skills, and searching for members based on skills criteria, are the typical features of the skills management systems, of course.

The increase of the number of various organizations implicates the need of skill management systems. But important feature of such systems would be to be able to be used as web services and integrated with other related systems. In other words, there is a need of a system which can be used as a web service and easily integrated with other web services.

Also, there is a need for information about existing skills management systems, and their features and limitations.

## 3. Overview of the existing systems

There are many software systems with skill management features. Most of them are about Human resources (HR) and, in general, Enterprise Resource Planning (ERP). These systems are complex, massive, often expensive, and many of their features are not related to skills management. So, they are impractical to be used as skills management web services and integrated with other systems.

A short overview of some representative existing skills management systems will follow:

- SAP ERP [1],
- INX InTuition [2],
- Remote HR [3],
- Open ERP [4].

The SAP ERP system is a big system that offers a lot of features and possibilities for every aspect of organizations management. A part of them is the skills management. But, this system is not dedicated to skills management, it offers a lot more than that, and it can't be easily integrated with other systems.

The INX InTuition system is also a big system that offers a lot more than skills management, so it doesn't satisfy the need for a system dedicated to skills management, used as a web service integrated with other web services.

The Remote HR system is a big HR system which offers a lot more than skills management. It also doesn't satisfy the need for a web service dedicated for skills management, integrated with other services.

The Open ERP system is a complex ERP solution, and, also as the previously mentioned systems, is a big system which offers a lot more than skills management and doesn't satisfy the need for a dedicated and integrated web service.

There are a lot more systems similar to the already described, with similar features. All of them have similar features and the same limitations.

#### 4. Methodology

There are several aspects of comparison of the skills management systems, divided in 3 categories:

##### 1. Technical:

- **software as a service – SaaS** (using the system as a service provided on Internet),
- **implementation as a web service** (a standardized way of usage and integration of the system),
- **„plug in‘ possibility** (easy integration of the system with other web services),
- **extensibility** (easy development and deployment of extensions of the system).

##### 2. Functional:

- **dedication to skills management** (which is important for organizations that don't want to use unnecessarily complex systems with a lot more features than needed),
- **members search based on skills criteria** (one of the most important features of such systems),
- **role-based skills management** (advanced way of logical separation of the members and their skills, based on their roles in the organization),
- **data administration** (providing a way of inserting, updating and deleting various data on the system),
- **reporting** (useful for organizations with many members).

##### 3. Usability:

- **configurability** (which would make the system adjustable to the user needs, providing efficient way of usage),
- **easy to use** (which would implicate a wider target group of users).

Some of the mentioned criteria are considered as more important than the others. These are:

- software as a service,

- implementation as a web service,
- „plug in‘ possibility,
- dedication to skills management.

The total grade of each of the evaluated systems is calculated as the mean value of the grades for all criteria, where the important criteria are double-graded.

The evaluation of the systems is based on their declaration, documentation, and the evaluation-matrix web site for evaluation of ERP systems. [5]

The overview of the evaluation of the mentioned systems is following next.

#### 5. Comparison

A tabular overview of the selected skills management systems comparison is shown here. The important criteria are displayed in bolded text.

	SAP	INX	RHR	OERP
<b>SaaS</b>	<b>1</b>	<b>3</b>	<b>3</b>	<b>3</b>
<b>Web service</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>Plug-in</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
Extensibility	3	1	1	3

**Table 1: Technical aspects**

	SAP	INX	RHR	OERP
<b>Dedication</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Search	3	3	2	3
Role-based	3	3	0	3
Administration	3	3	3	3
Reporting	3	3	3	3

**Table 2: Functional aspects**

	SAP	INX	RHR	OERP
Configurability	3	2	2	3
Easy to use	2	3	3	2

**Table 3: Usability aspects**

The total grades for each of the systems are:

	SAP	INX	RHR	OERP
Total	1.6	1.7	1.5	2

**Table 4: Total grades**

As it is shown, none of the analyzed systems is specialized for skills management and can't be used and integrated as a web service. All of them have the common features: searching, administration, reporting

and usability. But all of them have the same limitations.

## **6. Conclusion**

The evaluation and comparison of the selected skills management systems showed there wasn't found satisfactory skills management system, with all the required features.

## **7. Literature**

- [1] <http://www.sap.com/solutions/business-suite/erp/index.epx>
- [2] <http://www.inxsoftware.com/intuition.html>
- [3] <http://www.remotehr.com>
- [4] <http://www.openerp.com>
- [5] <http://www.evaluation-matrix.com>

