



# silverpeas

**Build a collaborative  
portal in just a few hours  
and optimize your  
company processes**

## White Paper

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# Functional Issues

## Strategy, organization and collaborative tools

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Today, words such as *Intranet*, *Extranet*, *e-business applications*, *documentary management or content management*, *search engine or workflow engine* and *collaborative work and portals*, form part of our everyday vocabulary.

In fact, these words describe the technological means rather than the functional needs they are supposed to meet.

In regard to collaborative work, many company managers now choose to switch from the 'tools' approach back to the 'business' approach, obtaining a global, consistent and durable answer to the following questions:

- ❶ Which processes in my company would benefit from collaborative work organization?
- ❷ What kind of qualitative and quantitative results are expected?

Two criteria determine the choice of FUNCTIONAL SERVICES to be implemented:

- **Improvement in productivity** of human resources, partners and technical resources
- **Improvement in the quality** of customer service

Today, the company is the place where collective actions are carried out not only by employees but also by partners, suppliers and customers, all seeking a more efficient collective organization to serve the end-user or improve service.

- Working collectively in this way brings together people from different businesses, languages and cultural backgrounds, all using heterogeneous data-processing tools.
- Increasing efficiency is crucial, achieved by using tools that are easy-to-use and functionally adaptable to business needs.

The Silverpeas™ portal provides upstream and downstream services especially to serve this collaborative approach:

***"Silverpeas™ offers simple, ready-to-use and re-usable functional components, adapted to collaborative business needs".***

## **Collaborative work: a new lever for competitiveness**

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Since 1995-1997, "groupware" applications such as mail box, file management, and shared diaries, have enabled individuals and teams to work faster in collaboration.

Collaborative work sets more ambitious goals, allowing companies to operate several new strategic organizational levers.

In order of increasing complexity of implementation:

### **How to increase productivity:**

- ❑ **simplify access to relevant information:** Documents, editorial information and databases are more valuable if they are available at the right time and for the right person.
- ❑ **Improve individual performance** of repetitive tasks or new missions:  
Can I achieve in 10 minutes what previously took me an hour to do?  
Am I certain I am not repeating what someone else has already done?
- ❑ **Generalize work in 'project' mode**  
Working collectively with common objectives and geared to managing costs and deadlines.
- ❑ **Simplify decision and control actions** concerning intensive strategic or operational processes in a highly multi-task environment, and often with the need to convince collaborators simultaneously.
- ❑ **Share knowledge**  
Identify know-how or skills to help me perform my mission and to automatically update my own level of expertise.
- ❑ **Keep watch on your environment**  
Some examples of collaborative processes are:  
detecting a threat or an opportunity in the corporate environment, controlling information during crises or major transition periods.

## Increase the quality of service:

- ❑ On-line download - high added value services or information for customers or partners, 24h/24h.
- ❑ Optimize workflow and quality of the information exchanged between the company and its environment

**“Working collaboratively generates multiple benefits for competitiveness ... and are hidden in your business processes”**

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## Structure collaborative applications

Most ‘business’ processes in a company are implicitly collaborative, and the result of the collective action of two or more contributors.

Examples of collaborative work:

- Authoring a document with several co-writers or approvers, communicating a formal message to its employees : eg **Theme Tracker**
- Seeking the opinion of its customers regarding the quality of its products **eg Enquete**
- Organizing an event between 3 subsidiaries located in 3 different continents **eg Diary, workflow tasking**

**Silverpeas™ has identified 3 types of collaborative processes:**

- ❑ **Basic ‘horizontal’ processes across the board:**  
These are generic processes applicable to several or all areas of company activity, and common to most businesses.  
They often contribute to the implementation of higher level collaborative processes:

<i>Process nature</i>	<i>Examples</i>
<b>Documentary Management Process</b>	<ul style="list-style-type: none"><li>❑ Quality documentary system with versioning</li><li>❑ File database</li><li>❑ Project file with multiform documents (Office, CAD, etc.)</li></ul>
<b>Content Management Process</b>	<ul style="list-style-type: none"><li>❑ Bookmark</li><li>❑ Newsletter</li><li>❑ Internal Web sites</li></ul>
<b>Collaborative Technical support Processes</b>	<ul style="list-style-type: none"><li>❑ Resource management diary</li><li>❑ Mail box management</li><li>❑ Shared diary management</li><li>❑ Task management</li><li>❑ Chat, forum, web conference</li><li>❑ Shared directories</li></ul>
<b>Project Management Process</b>	<ul style="list-style-type: none"><li>❑ GANT planning</li><li>❑ Project reporting</li></ul>

❑ **Advanced 'horizontal' processes:**

These are also generic processes applicable to several or all company business, directly supporting high added value applications and common to most companies.

<i>Process nature</i>	<i>Examples</i>
<b>Communication Management</b>	<ul style="list-style-type: none"> <li>❑ Top-Down / Down-Top communication in steady state</li> <li>❑ Crisis management</li> <li>❑ Change management</li> </ul>
<b>Knowledge Management</b>	<ul style="list-style-type: none"> <li>❑ Management &amp; access to resources and skills</li> <li>❑ Development of trade networks</li> </ul>
<b>Economic Intelligence Management</b>	<ul style="list-style-type: none"> <li>❑ Technology, commercial, social, and financial watch through collective intelligence process</li> <li>❑ Automatic watch</li> </ul>
<b>Quality Management</b>	<ul style="list-style-type: none"> <li>❑ Process management</li> <li>❑ Audit management</li> </ul>
<b>Human Resource Management</b>	<ul style="list-style-type: none"> <li>❑ Advanced resource planning</li> <li>❑ Human resource management</li> <li>❑ E-learning suite</li> </ul>
<b>Marketing Activity</b>	<ul style="list-style-type: none"> <li>❑ Event management</li> <li>❑ Product design process management</li> <li>❑ Management of operational marketing processes</li> </ul>
<b>Customer Care Management</b>	<ul style="list-style-type: none"> <li>❑ Hot Line process follow-up</li> <li>❑ Management of delivered product maintenance</li> </ul>
<b>Technical Support Management</b>	<ul style="list-style-type: none"> <li>❑ Critical message follow-up</li> <li>❑ Computing on demand</li> </ul>

❑ **Advanced business processes:**

These are processes of a combined collaborative & transactional nature, generally specific to a business. They are supported by specialized 'business tools (ERP, specific business applications, e-business, etc.) and by complementary collaborative applications.

Below are some examples taken from chain stores in the retail industry:

<i>Process nature</i>	<i>Example</i>	
	<b>'Business' application</b>	<b>Collaborative complement</b>
<b>e-catalog on Intranet</b>	<ul style="list-style-type: none"> <li>❑ Inventory management, order management</li> </ul>	<ul style="list-style-type: none"> <li>❑ Creation of collection</li> <li>❑ Management</li> </ul>
<b>Extranet for suppliers</b>	<ul style="list-style-type: none"> <li>❑ Management of collection decision process</li> </ul>	<ul style="list-style-type: none"> <li>❑ Supplier Information</li> <li>❑ Directory management</li> </ul>
<b>Financial reports catering industry (multi-site)</b>	<ul style="list-style-type: none"> <li>❑ Analysis of financial indicators through Business Objects</li> </ul>	<ul style="list-style-type: none"> <li>❑ Circulation and discussion about monthly targets</li> </ul>

# Examples of collaborative applications

## Case history 1: SOGREAH

On the collaborative portal of an international engineering company, shared knowledge is managed and a new business network has been created.

The services implemented are:

- Document management
- Questions and Answers to experts
- Forum
- Directory of recommended web sites
- Expert locator.

## Nouvelle capture??

Date	Statut	De	Int. Sujet
16/02/2003	Port de Bastia - Dossier d'affaire	Administrateur	Une nouvelle publication
06/02/2003	Décrets - Des documents	ANNOUX Sylvie	Notifications - Base documents

The portal organizes document sharing and knowledge and communication processes, for a network of 6000 research & development experts, working in a specialized telecommunications company.

More than 10 SERVICES are implemented for document management, content management, collaborative work and project management.

## Nouvelle capture??

## Case history 2: BOTANIC

The supplier is connected to the ERP via Silverpeas™ which allows a chain of garden/DIY stores to offer its suppliers the means to follow product performance and submit seasonal product promotions, in real-time.

In this instance, collaborative services (directory, documentary management) exist side by side with specific applications of the “catalog management” type.

### Nouvelle capture??

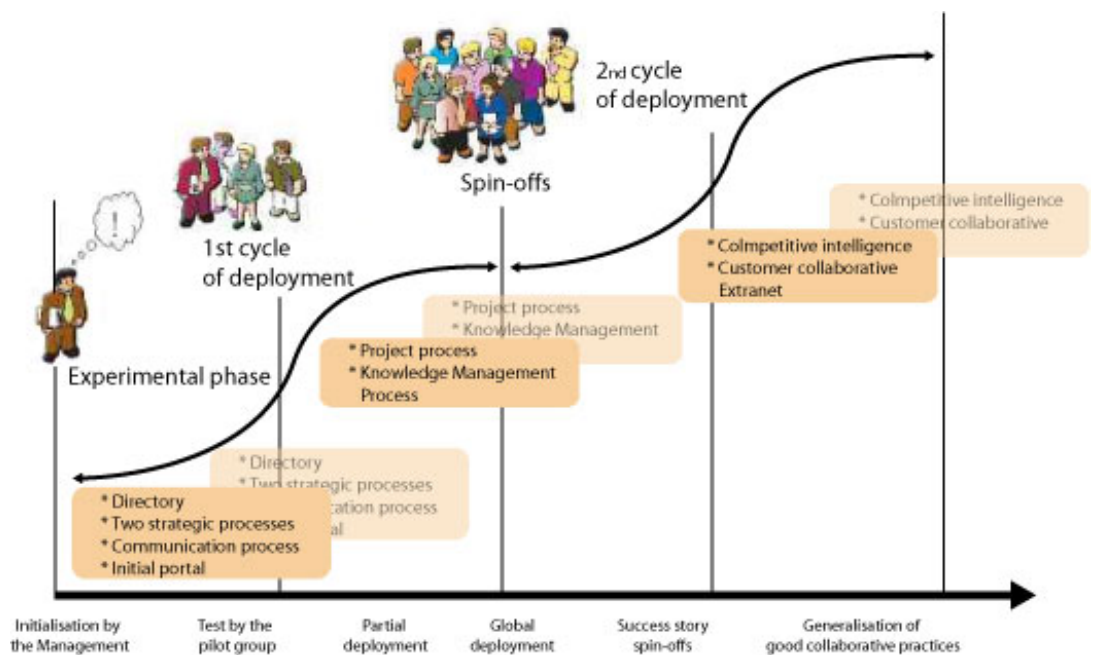


## Light & upgradeable structuring tools

A director would not usually decide overnight that his company must become completely 'collaborative' in just a few days.

Before making snap decisions, they would typically want to:

- implement initial tests over a short period
- postpone the implementation of some collaborative services
- avoid complex and restrictive tools
- offer applications that are fine-tuned to user's needs
- propose badly adapted functional services at the start, without casting doubt on the relevancy of the global approach!



## The Silverpeas™ 'vision'

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Since the year 2000, we have understood that collaborative processes are a wonderful lever of operational efficiency at the service of corporate strategy.

However, we also know that the efforts required to modify people's attitudes and behaviors will have a serious curbing effect on the deployment of these solutions.

Specialized software products are often perceived as complex by definition, requiring current processes to be adapted to the tool, long implementation and costly in time and money.

In 2001, SILVERPEAS began to develop a product designed to satisfy 4 main requirements:

Design a collaborative platform which:

- ❑ is quick and easy to install
- ❑ offers generic services at very low cost
- ❑ proposes specialized and customized services with high added value
- ❑ supports the progressive implementation of long and sometimes complex collaborative processes.

**“With Silverpeas™, you have the right to:**

**→ make occasional mistakes**

**→ request a new application that you didn't initially plan for**

**→ share your best collaborative experiences and spread know-how within your project team”.**

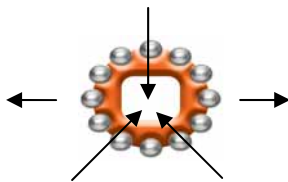
# The full modular approach of Silverpeas™

SILVERPEAS has been pushing forward its revolutionary concept since 2001.

Silverpeas is a platform for creating collaborative applications by employing ready-to-use applicative components, which can be installed without special software skills.

Silverpeas™ is based on 3 simple and very powerful principles:

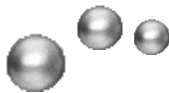
1. **Collaborative workspaces**
2. **Ready-to use and re-usable services ('Peas')**
3. **The Silverpeas™ Job'Bus™**



1. **The collaborative space** is the work area of teams or professional communities.

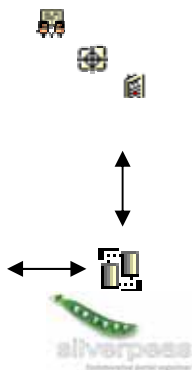
The first task for a manager (manager, executive secretary, foreman) when building a professional community, is simply to create a virtual space which is accessible from a web browser. This space will only be accessible to authorized persons, employees, suppliers, customers.

2. **The ready-to use and re-usable Services ('Peas')** are ready-to-use application components configured and installed within the collaborative space by the space manager.



Build simple or sophisticated collaborative applications in just a few clicks, which are immediately available from a web browser.

These components are based on Java™ EJB (Enterprise Java Bean) technology, and satisfy a variety of requirements classified into two categories:



- **Choice of 30 Autonomous Services** or "Standalone Portlets", ready to satisfy a variety of functional needs: documentary management, content management, directories, workflows, specialized groupware applications.
- **Connector Services** to external applications: connectors to "front end" applications for aggregating multi-source contents (Web sites, DBMS), API for connection to ERP or GED type applications or access to Web services using an XML description.



3. **The Silverpeas™ Job'Bus™ : a portal type platform** provides a 'turnkey' run environment, with 6 engines, to which groupweb services are added: shared diaries, task management, notification messages or pop-ups.

❶ **Full text Search engine:** based on the Lucene engine from the Apache Jakarta project, this search engine allows each user to build storable queries. All the Documents managed by Silverpeas are referenced, regardless of their type: Office, PDF documents, data entry forms, HTML / XML documents, workflow, relational data, etc.

The search engine works also on metadata: author, dates of publication, type of targeted KM-Service, categories of classification scheme.

❷ **Push/Pull notification engine:** This powerful tool created by SILVERPEAS, allows the user to create new information channels in order to receive manual or automatic notifications via:

- e-mail
- a Silverpeas™ portlet
- pop-up windows
- Texto/sms via a server

❸ **Workflow engine** to configure business processes

## Workflow procedures:

**Workflow procedures** is a service used to automate and coordinate 'business' procedures within a project team. Information documents and tasks are distributed between contributors, in accordance with a procedural rule. This enables each member of the team to correctly perform the *right* function at the *right* time.

*Examples:* Bug testing and correction procedure, vacation management procedure, requisition or critical message, etc.

In Silverpeas™, roles (e.g. validator, hierarchical officer, etc.) are assigned to contributors (e.g. the accountant) who manage Actions (e.g. validate a vacation application).

These actions are controlled by the progress status of the procedure (e.g. accepted and validated, pending validation).

The folder collects all the information and documents required by a procedure (e.g. claim form vouchers and electronic form) and all the data (e.g. number of days, manager's comments).



Name	Status	Type de congés	Nombre de jours
Congés du 08/10/2009 (Journée) au 08/12/2009 (Journée)	Acceptée et validée	RTT	3
Congés du 07/28/2009 (Journée) au 08/04/2009 (Journée)	Acceptée et validée	Congés payés	6
Congés du 07/13/2009 (Journée) au 07/13/2009 (Journée)	Acceptée et validée	RTT	1
Congés du 06/26/2009 (Journée) au 06/29/2009 (Journée)	Acceptée et validée	RTT	2

## Standard workflow procedure ergonomics

According to the principles of Silverpeas™, depending on his/her role, each user sees all the instances of the procedure in which he/she is involved:

The view of a procedure gives all information necessary for following up or contributing to this procedure.

## Procedure creation:

Silverpeas™ describes a procedure by programming an XML file. Each WORKFLOW "Instance" becomes in turn a KM-Service available in the component catalogue... and deployable at will in the collaborative spaces.

The possibility of directly re-using workflow procedures from a catalogue is unique in the world of collaborative platforms, and enhances the spreading of best practices within the company. It also reduces process development costs.

## Other workflow engine capacities

The engine manages simultaneous parallel tasks such as the transmission of an e-mail to one person and a validation request to another.

The workflow process instances are indexed by the search engine as well as in the classification scheme.

## Benefits expected from 'business' procedure automation

The Silverpeas™ workflow engine satisfies a whole host of requirements:

- ❑ **Managers** wishing to improve **work efficiency** of their company or organization.  
Silverpeas™ solution: Improved Return On Investment materialized in terms of time saving.
- ❑ **Project Managers** wishing to implement **tools that will structure activities and exchanges** within their project teams.  
Silverpeas™ solution: Quick and simple solutions which can be implemented without the help of a computer specialist.
- ❑ **Team members** expect daily help in **rationalizing and formalizing action requests as well as the resulting actions received as an answer**.  
Silverpeas™ solution: Simplicity, reliability and promptness of service.
- ❑ **Method Managers** expect a tool designed to **define and spread procedures** at the organizational level.  
Silverpeas™ solution: Simplicity of procedures and sharing.
- ❑ **Information system administrators** expect a controllable solution.  
Silverpeas™ solution: Simple configuration and a high degree of reliability. Implementation of bug correction tools.

#### ④ Authentication engine:

Silverpeas™ offers a 'Single Sign On' LDAP directory. This directory is supplied directly by the administrator or by one or more directories defining primary groups: NT directory, Exchange or Activ'Directory, Lotus Notes or proprietary directory.

Administrators can thus build groups or user profiles according to free and multiple criteria. (geographic, department, project team...). These groups are necessary to define access rights to collaborative spaces and the roles each user plays in a deployed KM-Service.

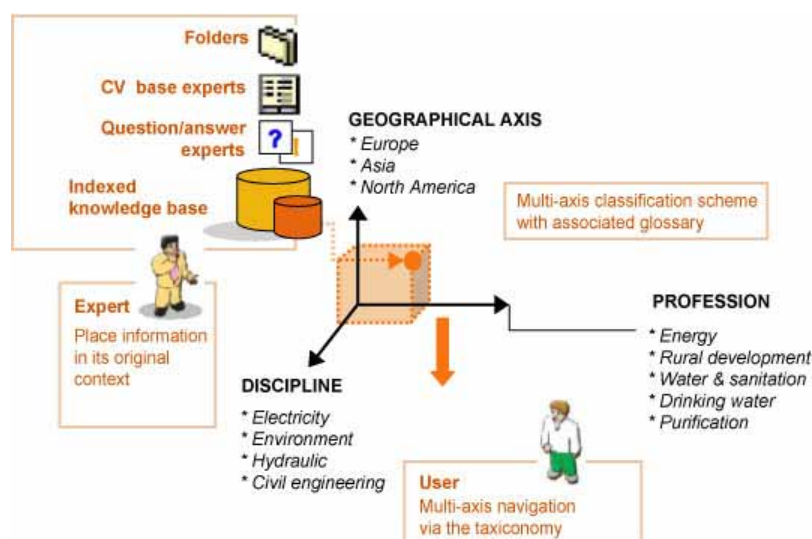
The level of application for certain KM-Services is right down to the document. Flexibility of access right management is linked to application component management and thus varies according to needs. Permanent security is guaranteed for all applications accessible from Silverpeas™.

#### ⑤ Classification tool by taxonomy:

Offering a genuine DOCUMENT classification reference frame. The real Knowledge Management core, the Silverpeas™ classification scheme is a hyper-cube of N tree structured axes. Each axis can be freely defined by the administrator responsible for the knowledge sharing process: geographic, product, business, discipline, type of document, etc.

A collaborative space, or even a component, is linked to an axis scheme output, also referred to as a "classification sub-scheme".

Any document managed by a KM-Service could be referenced manually by the contributor in this classification sub-scheme: Silverpeas™ documents, expert CVs, workflow process instances are referenced in this way.



**⑥ CUSTOMIZATION TOOL:**

The stand-alone version of Silverpeas™ allows KM-Services to be displayed as “portlets”, where several interfaces presenting KM Services applications are simultaneously displayed on the browser page. One view is sufficient to see access to applications and information concerning a coherent subject. The browsing bar can also be customized to comply with the company’s graphic design rules.

*Definition of project space portlets*



*Figure x Portlets view*

## 🔗 **GROUPWEB TOOLS**

Silverpeas™ offers Groupweb services (equivalent to Groupware in web browser mode).

### **3 tools are available:**

- ❑ **A shared diary**  
Conforming to the iCalendar norm for managing a personal diary and meetings, with availability check.
- ❑ **Notification screen**  
Each user receives notifications, pushed either by KM-services or other users, or corresponding to voluntary subscription to a KM-service.
- ❑ **Task or 'TO DO' Manager**  
Manages the allocated list of tasks for each user for certain application components (workflow, project management, etc.)

## Building a collaborative portal with Silverpeas™

The Silverpeas™ building and administration modules propose 4 levels of management:

- ❑ The JOB'DESIGNER creates two types of collaborative applications: elementary horizontal processes and advanced horizontal processes by assembling KM-Services. The administrator, or by delegation the space manager, selects the KM-Service(s) available in the catalog for which he has acquired management rights. He defines the roles (who can do what?) and parameterizes if necessary the operating modes of the KM-Service... Lastly, he deploys it in the collaborative space he manages. A new function designed to store and copy/paste collaborative spaces is a means of spreading pre-configured advanced processes.

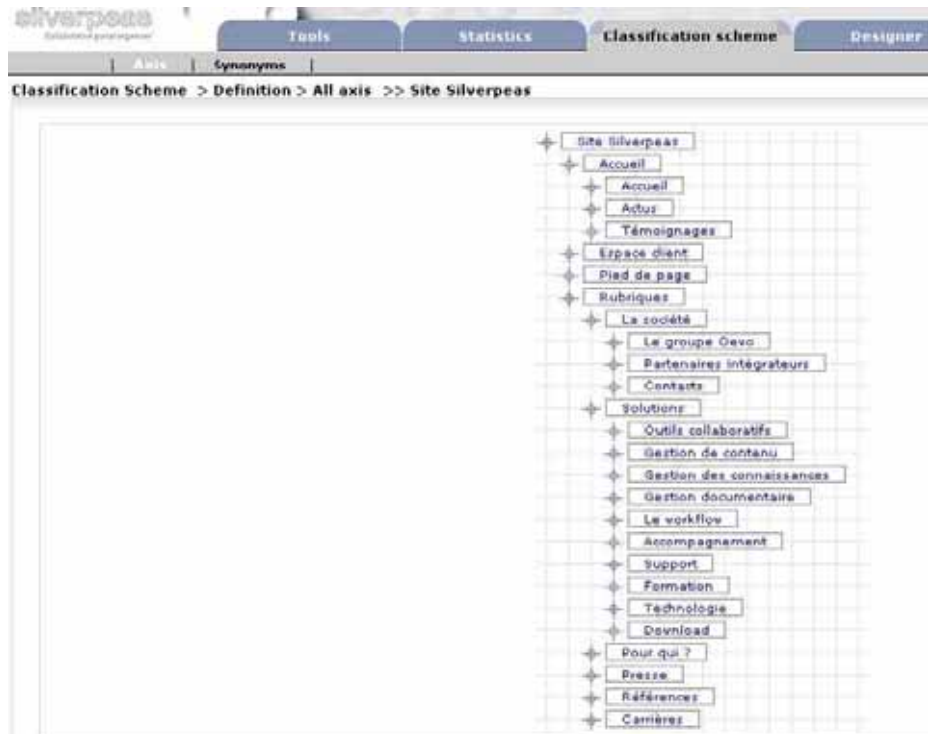
**“Thus, the executive secretary, the project manager or the communications manager create their application intranet themselves”**



Figure x Add a service

*The “Advanced documentary management” KM-Service has been chosen. The person freely configures the processing model of the documents he/she will have to manage: tree structured management of directories, classification in the categorization scheme, optional addition of attachments, function concerning “read checks”, check-in / check out, versioning, workflow, etc.*

- The JOB'KM is intended to create the classification scheme categories, as well as a glossary for each category. The additional thesaurus makes it possible to personalize the terms presented to the user, according to the preselected glossary.

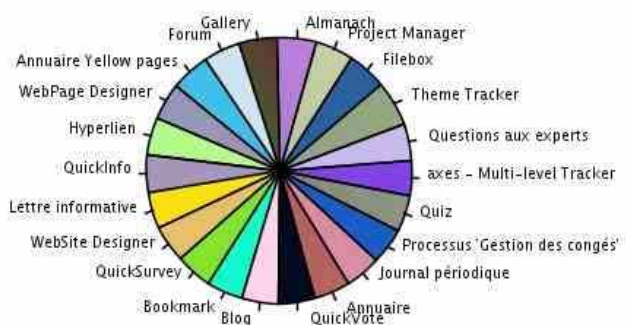


Classification scheme

- The JOB'STATISTICS provides the basic tools for analyzing transaction volumes and the utilization frequency of each KM-Service space. It is thus possible to generate consultation statistics for the portal and to plan corrective actions to make it still more attractive and efficient.



Type of services distribution



## KM-Services for the new SP v5

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There are many hundreds of combinations for building added value collaborative applications, thanks to the catalog of available components.

New KM-Services can be created using the software workshop, SDK Silverpeas™.

### Documentary management:

<i>KM-Service</i>	<i>Example</i>
Advanced documentary management "Theme Tracker"	<input type="checkbox"/> Quality documentary system with versioning, approval workflows and "safe" function, date of validity, attached files, etc....
Simplified documentary management "File Box"	<input type="checkbox"/> Chronological management by secretarial services <input type="checkbox"/> Provision of Zipped files by software support
Multi-axis documentary management "Multi-level Tracker"	<input type="checkbox"/> "Product" roadmap management <input type="checkbox"/> Catalog management <input type="checkbox"/> Resource management

### Content management:

<i>KM-Service</i>	<i>Example</i>
Web site directory "Bookmark"	<input type="checkbox"/> Remarkable site reference for R&D management
Quick information "Quick Info"	<input type="checkbox"/> Project team display chart <input type="checkbox"/> Proverb of the day
"Web designer"	<input type="checkbox"/> Human resource Web pages
"Newsletter"	<input type="checkbox"/> Corporate Newsletter for customers in Extranet <input type="checkbox"/> Internal Newsletter per department

### Collaborative work:

<i>KM-Service</i>	<i>Example</i>
"Almanach"	<input type="checkbox"/> Resource reservation calendar <input type="checkbox"/> Training calendar
"Forum"	<input type="checkbox"/> Expert forum
"Chat"	<input type="checkbox"/> Project team discussion
"Project Manager"	<input type="checkbox"/> Ad-hoc project discussion
"Quick Vote"	<input type="checkbox"/> Voting process management
"Quick Survey"	<input type="checkbox"/> Survey process management

### Knowledge management:

<i>KM-Service</i>	<i>Example</i>
"Expert directory"	<input type="checkbox"/> Directory listing corporate skills
"Forum"	<input type="checkbox"/> Management of workflow processes, Questions/Interception by an expert/answers

### Connectors:

<i>KM-Service</i>	<i>Example</i>
Outlook Web Access™ "OWA"	<input type="checkbox"/> Connection to an Exchange 2000™ public folder
Lotus Notes™ "Lotus Notes™"	<input type="checkbox"/> Display by portlet of Domino™ databases and search in the Lotus Notes databases
"JDBC"	<input type="checkbox"/> Configuration of a database consultation query
"Hyperlink"	<input type="checkbox"/> URL link
"Weather"	<input type="checkbox"/> Link to the "National Weather forecast" service Web

## Advanced horizontal processes:

<i>KM-Service</i>	<i>Example</i>
Workflow "Resource management"	<input type="checkbox"/> Equipment, rooms, staff planning
Workflow "Bug tracking"	<input type="checkbox"/> Management of anomaly traceability in the software creation/test process
Workflow "Expenses manager"	<input type="checkbox"/> Claim form management

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## Knowledge Management with Silverpeas™

Collecting and organizing classification of explicit or implicit knowledge, providing the right information at the right time for the right person, finding specific skills ... all these are relevant services for optimizing and capitalizing your company's collective memory and knowledge.

Silverpeas™ is a natural and flexible solution to help you structure the complex process of the KM:

- Delegate responsibilities to team members**  
"KM project management" : specific knowledge is allocated a community space, a team in charge of promoting organization of knowledge on this theme, and goals to be achieved within a pre-defined time
- Federate**  
Professional communities enhance skills within a personalized collaborative area: the collaborative KM space associated with a specific theme.
- Organize**  
User reference system: classification scheme, glossary, central directory, homogeneous user interfaces
- Collect**  
Indexation of information and expertise in the classification scheme: e-mails, expert CVs, 'chats' on specific subjects between technicians, newspaper articles.

**"In Silverpeas™, Knowledge Management is implicitly implemented and naturally put into practice by users"**

## Main benefits from Silverpeas™

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Silverpeas™ is designed for companies wishing to experiment or deploy collaborative work solutions on a large scale:

- A functionally adaptable solution meeting each specific need: RANGING FROM SIMPLE TO COMPLEX, Silverpeas™ enables each team to acquire the strictly necessary services and always standardizes dialog interfaces with the user.
- A quick to install portal (less than 24 hours)
- Very simple MMIs, whatever the processed functions, thanks to menu consistency and the explanatory hints.
- A structuring environment offering a classification reference system and a consistent and complete access to information.
- A drastic reduction in costs for development and deployment of new services.

**“With Silverpeas™, develop once...  
and deploy at will”**

Thus, the employee in charge of local consistency of team work processes will be able to implement an already existing KM-Service or a KM-Service specifically developed for one or more professional communities.

# The SILVERPEAS Solution

## A solution ready-to-use and delivered in 24 hours

SILVERPEAS fulfils the requirements of companies wishing to implement a collaborative solution as quickly as possible:

- ❑ **Silverpeas™ Pilot: hosted** solution on mutualized or dedicated server. It takes the form of monthly renting of a ready-to-use solution; only a web access is required from the customer and the KM-Services are chosen from the available catalog. It is very easy to subscribe to this service:

This offer includes:

- ❑ Hot line (payment with the call)
- ❑ Online documentation
- ❑ Space manager training (1 day)
- ❑ Hosting infrastructure (servers, data back-up, ORION and Oracle 9i server application, 128 kb/s bandwidth)

- **Silverpeas™ Collaborative Edition:** this solution is **delivered** on a server with a customer configuration including: an application server and a data server. The contract takes the form of a transfer of permanent license utilization rights. Additional services are customized according to requirements (see the list below).

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## Complementary services

SILVERPEAS offers a whole host of services that are often invaluable during implementation of collaborative solutions:

- Silverpeas™ Consulting modules:
  - ⇒ Define strategic & operational objectives (3 days)
  - ⇒ Model and parameterize KM-Services (1 day)
  - ⇒ Model the Knowledge Management approach (3 days)
- Silverpeas™ Training modules
- Silverpeas™ hot line:
  - ⇒ Assistance with platform operation
- Silverpeas™ specific developments
  - ⇒ Customization of graphic design
  - ⇒ Development of integration applications
  - ⇒ Adaptation of existing KM-Services
  - ⇒ Development of new KM-Services
- Silverpeas™ SDK
  - ⇒ Acquisition of the Silverpeas™ SDK development license
  - ⇒ SDK training (5 days)
  - ⇒ Integration of a SILVERPEAS technical coordinator into the customer development team

### 4 advantages of the technology:

- ❑ Re-usable objects from the functional and technical point of view.
- ❑ High connectivity necessary (database, ERP, CRM, sites or already existing applications).
- ❑ Upgradeability of the solution, from the functional and technical point of view. The tool must adapt to customer environment changes and developments,
- ❑ Silverpeas™ is completely independent from service suppliers: use of standards, in particular availability of an OPEN SOURCE solution (except database).

## Environments and languages

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These Technologies provide solutions for the following problems:

### **JAVA™** standard object language for industry

- ❑ Portability (Linux, NT, Solaris, etc.)
- ❑ Modularity
- ❑ Maintainability
- ❑ Upgradeability

### **XML (eXtensible Markup Language)**

- ❑ Opened semantics unlike HTML
- ❑ Ideal for management of inter-applicative data flows

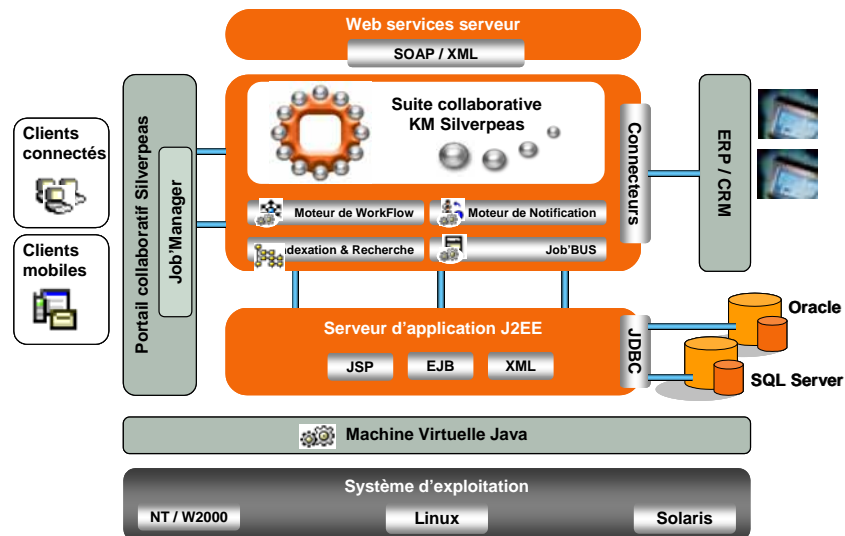
### **J2EE / EJB** (ORION (Open source), BEA/Weblogic, ORACLE: /Oracle9i, IBM: Websphere, BORLAND: BES)

- ❑ Load balancing (Object pooling, Load-balancing, clustering)
- ❑ Transaction management
- ❑ Resource abstraction
- ❑ Distributed Architecture

**Compatible clients:** Linux Netscape™ 6.2 Client and Windows IE™ 5.5 Client.

## Logical Architecture

SILVERPEAS develops its Java™ components in accordance with the EJB standard. The presentation layer uses Java™ JSP and general processing is developed in Java™ Servlet.



This architecture is based on the 'MVC' pattern (MVC = Model, View, Controller). This pattern guarantees Silverpeas™ a high level of maintainability, upgradeability and productivity, even for complex applications:

- The Java™ developer uses his tools for solving problems related to applicative logic, transactional logic and business rules,
- The computer graphics designer uses his tools for the data presentation part. Thus each employee works efficiently.

This pattern also ensures simplified maintenance of applications. Indeed, changes in the graphic design rules of the application will have minimum impact on the application because only JSPs will have to be modified (The servlet and pattern parts do not depend on the graphic design rules). Likewise, modification of the information system structure will have no impact on graphics.

## Graphic customization

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The platform's graphics are completely customizable via an XML file:

- ❑ Logos
- ❑ Navigation bar
- ❑ Top bar
- ❑ Background
- ❑ Operating buttons (picture, text, etc.)

## Integration capacity and single access point

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Silverpeas™, as a portal, provides a solution to information system integration problems. Thus you can:

- ❑ Access external applications through a unique access point and an homogeneous ergonomics,
- ❑ Perform inter-application transfers transparently via the portal.

**Silverpeas™ is based on 2 main principles:**

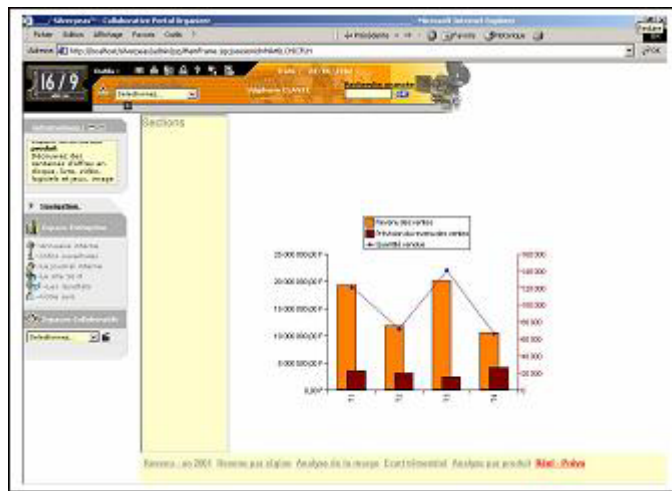
- ❑ Open technology based on JAVA™ standards and connectors to databases by JDBC driver. Information organization is fully dynamic with database storage.
- ❑ Multi-level integration modes according to needs:

⇒ **Level 1 - Hyperlink**

Hyperlink comes as a standard component of Silverpeas™.

This integration mode creates a link with the application with optional login/password.

Manages links to external sites as well as access to a Silverpeas™ native components.



⇒ **Level 2 - Batch**

This mode operates data migration in asynchronous mode (i.e. by delayed updating), in the form of batch programs with planned execution.

These specific solutions, are perfectly controlled as they are often deployed within SILVERPEAS customer projects: directory updating, external DB updating, complex links with an ERP.

The degree of complexity of this kind of integration particularly depends on the management rules implemented.

Insofar as interactions between Silverpeas™ and other databases integration is simple and avoids all synchronization problems.

⇒ **Level 3 - 'Real-time' integration**

This mode implements real time integration (read and/or write in source and target databases), which requires specific development according to the Silverpeas™ component.

⇒ **Level 4 - Integration of Web Services**

Access to external applications, such a web conference or an e-learning application, is also possible using SOAP/XML descriptions.

## Load balancing

The benchmark tests carried out on Silverpeas™ under the following conditions:

- ❑ Based on Weblogic© 6.0 from BEA
- ❑ NT Pentium 4 (2 GHz) / RDRAM 2 Gb) Sius Windows 2000 servers and SQL Server 2000
- ❑ Simultaneous use by 1000 users equally divided up among 4 KM-Services: documentary management, vote, diary and tasks
- ❑ In total 252 000 pages viewed within 1 hour (4.2 pages viewed every minute by each user)

The response times per page were:

<i>Average response time per page</i>	<i>in Seconds</i>
Reading of a document	0.7 s
Reading of a post in the vote	0.5 s
Reading of an appointment	0.2 s
Reading of a task	0.1 s

For document management, page display times were:

<i>Pages viewed between:</i>	<i>Number</i>	<i>%</i>
Less than 0.5 seconds	41500	57 %
From 0.5 to 1 s	17040	23.7 %
From 1 to 1.5 s	6300	8.75 %
From 1.5 to 2 s	3250	4.5 %
From 2 to 2.5 s	1500	2.1 %
From 2.5 to 3 s	900	1.25 %
From 3 to 3.5 s	550	0.76 %
From 3.5 to 4 s	313	0.43 %
...		
From 9.5 to 10 s	6	0.008 %
		<b>98.5 %</b>

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### Silverpeas™

SILVERPEAS S.A., established in 1997 under the name of STRATELIA, is now part of the OEVO group, an integrator specialized in object-oriented technologies (Java, .NET).  
SILVERPEAS S.A. is the editor of the Silverpeas™ solution and proposes consulting, training, maintenance and specific development services around Silverpeas™.

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