Yphise portfolio of valuable projects

Independent research since 1985

Software Product Assessment | EXECUTIVE VOLUME

SELECTED PROJECT

ARDD - Agile Requirements-Driven Development

Aligning the agile development projects with business needs

GM Governance	**IS** Information Systems
PR Projects	**SO** Service Management

Foreword 3

EXECUTIVE OVERVIEW

Benefits 5

Yphise shortlist 11

Yphise ranking 17

APPENDIX

Assessment overview 23

Yphise ISO 9001:2000-certified independent quotations of software products

Yphise is committed to providing IT executives and managers with the best independent research on methods and solutions to optimize IT performance.

Yphise is an independent company that conducts ongoing research programs for IT executives and managers. Yphise has a dedicated research team in order to guarantee independence, consistent results and timely updates.

Yphise clients include over 900 major companies worldwide. They come from all sectors, including manufacturing, banking, insurance, retail sales, transportation, services and government.

Yphise conducts two exclusive ongoing research programs

1. Comparative assessment of software products

Yphise identifies and certifies the software products that allow large companies to increase the value of their information systems while optimizing the costs and managing the risks. Yphise covers all areas of interest to develop, operate, maintain and secure the applications to compete. Yphise has assessed 150 software products each year since 1985. This program is ISO 9001:2000-certified in order to guarantee independence and accurate focus on key issues for large companies.

2. Assessment of operational practices and methods

Yphise provides IT executives and managers with an open framework of operational best practices aimed at optimizing the IT cost, value and risk. It covers all IT missions in order to guarantee effective operational management. It uses a pragmatic approach. It includes a scoring model for easy periodical self-assessment. This leads to immediate improvement of each IT process through use of the released best practices.

yphise@yphise.com

PO BOX 142, Southbury, CT 06488 - USA T 1 203-405-2549 - F 1 203-405-2569

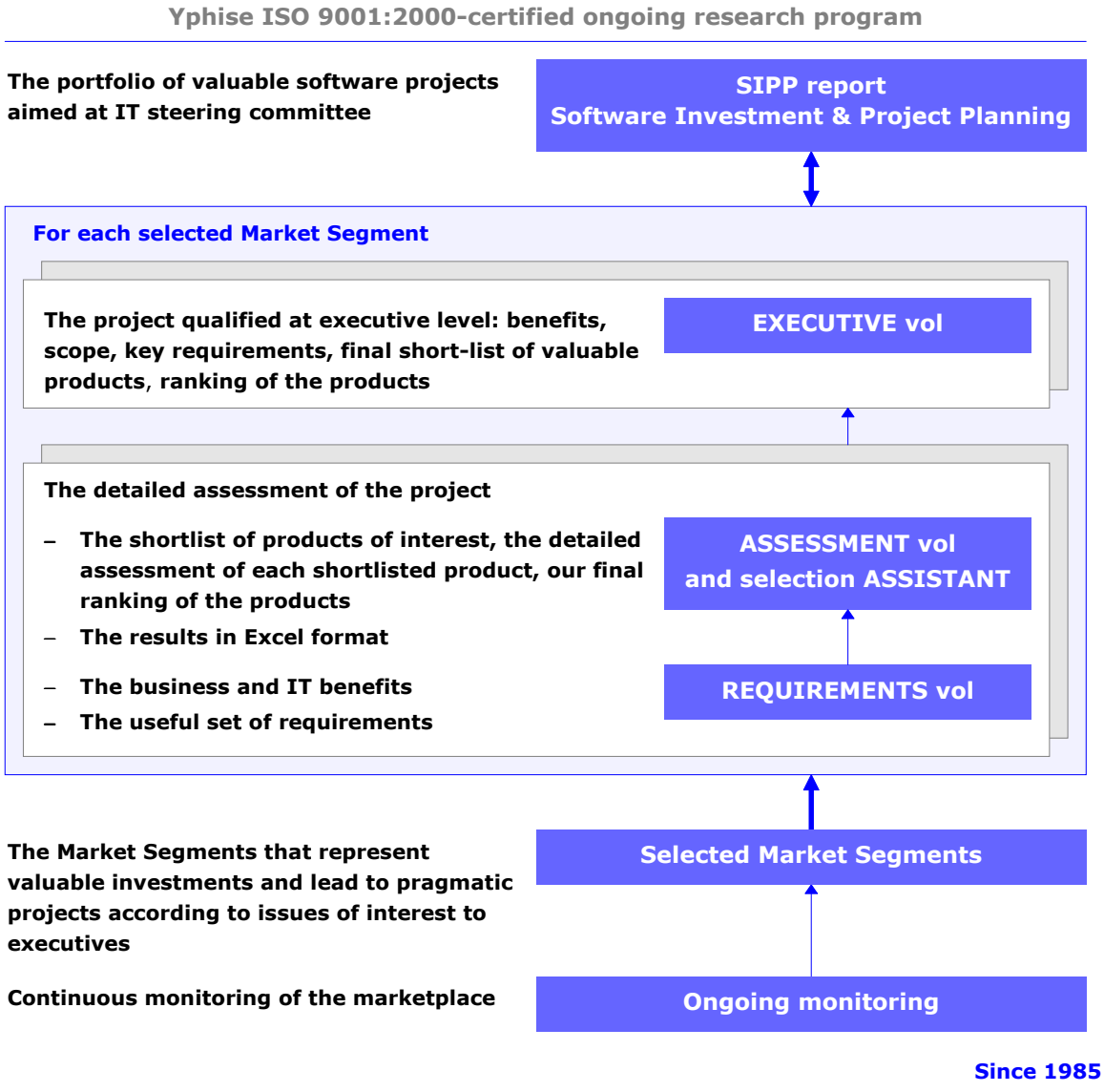
6 rue Beaubourg - F-75004 PARIS T (33) 1 44 59 93 00 - F (33) 1 44 59 93 09

This report is produced and edited by Yphise. Yphise is an independent analysis company. The opinions and results put forth are based on a thorough analysis founded on sources of information known to be reliable. Still, Yphise cannot be held responsible for the use made of the opinions and results provided. No part of this document may be reproduced or transmitted in any form or by any means, without the express written consent of Yphise.

© Technology Transfer. March 2008. Yphise is registered trademark.

FOREWORD

The EXECUTIVE volume summarizes the results of independent research conducted by Yphise on the assessed market segment.



This market segment has been selected under the Yphise ongoing research program, which identifies the software products that represent a valuable investment for large companies. The EXECUTIVE volume defines the project at the executive level. It establishes the benefits, scope, key requirements, as well as a final short list of products with proven strengths.

The Yphise ongoing research program has helped executives plan, prioritize, conduct and control the useful software projects in order to increase IT performance since 1985.

©Yphise

– This program covers all areas of interest to large companies. Yphise has unparalleled experience in identifying those market segments that represent valuable investments and projects.

GM IT Governance and Management

- Method and quality management
- IT financial and asset management
- IT risk control
- Outsourcing strategies
- Business Partnership management
- Demands and project portfolio mngt

IS Information System Management

- Architecture
- Industrializing
- Security

PR Conducting Projects

- Conducting projects
- Architecture
- Industrializing
- Security
- Testing
- Maintenance
- Service Continuity
- Service level management

SO Service and Operations Management

- Change and release management
- Environment delivery
- Operations
- Help-desk, incidents, problems
- Service Continuity
- Service level management

– This program is ISO 9001:2000-certified (since 1999). This unique distinction demonstrates independence and a robust methodology for assessing software products according to the priorities of large companies.

The Executive License grants IT executives, software vendors and service providers with online access (www.yphise.com) to all the EXECUTIVE vols and to the SIPP (Software Investment & Project Planning) report (see the Appendix: Yphise Executive License).

©Yphise

BENEFITS

Agile Requirements Driven-Development (ARDD) solutions help understand, capture and organize business needs for projects. They make it possible to conduct fast-paced software development projects, while keeping them aligned on business needs.

ARDD solutions manage numerous explicit and implicit business needs. They provide interfaces and connectors to capture requirements from various sources and stakeholders. They manage the refining of business needs into functional or nonfunctional system requirements. They track changes and dependencies in order to guarantee requirement consistency within the project. They manage the requirement scope of each project or project iteration. They manage the full lifecycle of requirements.

Benefits for the business

Business lines used to request strict alignment on needs, while demanding an increasing agility from IT. The IT used to consider alignment and agility as incompatible. Indeed, the increasing need for agility requires an appropriate tool in order to manage alignment while conducting agile projects.

ARDD solutions are a key factor in balancing the need for agility and the need for appropriate risk mitigation from both the business and IT points of view.

- **Improving the business agility**

  IT departments get involved in agile development in order to meet the increasing business need for agility. However, agile development does not always deliver the expected value, because it makes alignment on business needs more difficult. Agile development leads to delivering the result quicker, but this result may represent less value for the business.

  Requirements management makes alignment on business needs possible in agile development. It avoids the unaffordable increase in the number of required iterations before a business agreement is reached. It helps focus on the actual business priority, instead of focusing on the easiest and faster developments.

  Business agility is also tied to the quality and reliability of the delivered information. Agility requires targeting the need directly and appropriately, without numerous iterations and corrections. It takes into account the goals and objectives required in each iteration of the project. During the course of projects, ARDD solutions control whether requirements are met correctly. They ensure the consistency of business needs despite the number and variety of stakeholders involved. They reduce the time wasted in developing features not aligned on actual business needs.

  This ensures flexibility in case of change during the project. Upon change in projects, requirements need to be changed as well. ARDD solutions help take into account the impact on other requirements.

©Yphise

- **Mitigating the operational risks for the business**

  Agile development may degrade the management of requirements tied to security, efficiency in operations and flexibility. It focuses on immediate features, i.e. the ones most visible to the customer. This increases operational risks.

  Mitigating the operational risks for the business requires managing the implicit requirements for security, efficiency in operations and flexibility.

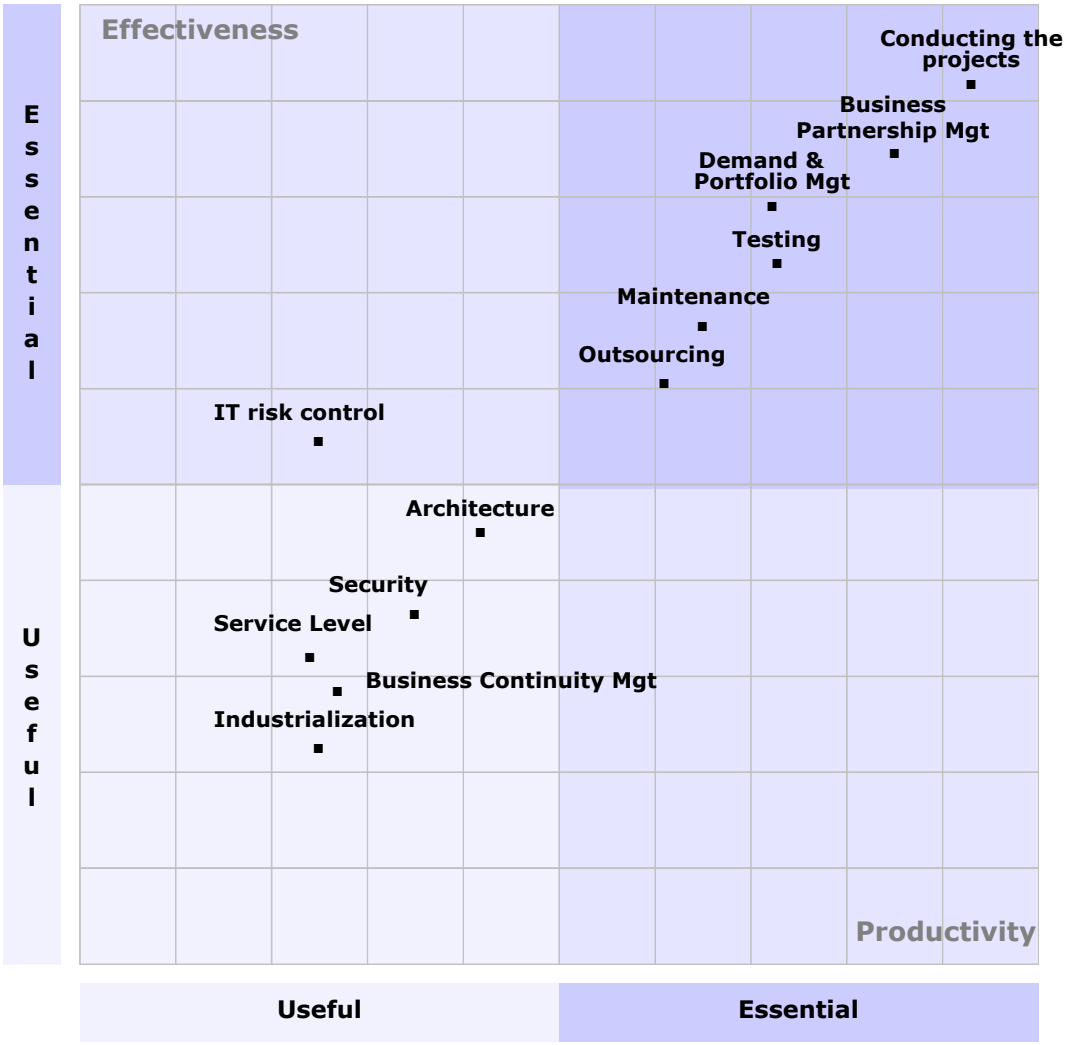
  Mitigating the operational risks for the business requires reducing the number of errors caused by a misunderstanding between the IT and the business during the design stage or even in later stages. ARDD solutions provide the capability for defining, refining and tracking accurately the business requirements during projects.

  Operational risk mitigation is also tied to business involvement. The more the business collaborates throughout the projects, the more the projects succeed. ARDD solutions provide collaborative tools in order to make the requirements understandable to both the IT and the business.

  Mitigating the operational risks for the business requires translating the business needs, including the implicit requirements. These requirements are so self-evident to the business that it may miss mention them. ARDD solutions validate the requirements to be handled at each iteration and detect any nonalignment on actual business needs, whether explicit and implicit.

©Yphise

Benefits for the IT processes



Benefits for the IT processes

➢ Conducting the projects

The mission of the project manager is to conduct projects according to the target value and the expected cost and duration. The success of a project requires effective collaboration of the stakeholders involved.

Agile development makes project management more difficult. Project managers must decide on the appropriate scope for each iteration in the agile process. They lack a clear view of requirements that are met or not met. ARDD solutions reduce the workload of project management in agile and fast-paced projects. They help select and validate the appropriate scope at each iteration, whatever the iteration granularity. They provide reliable reports on the requirement status within projects.

©Yphise

- **Testing**

  The testing process must guarantee both the functional and technical adequacy of applications. It must guarantee the validation of changes made by the various projects.

  Agility in fast-paced projects is often limited by testing costs. The testing frequency is limited by factors such as the testing environment availability. It is also limited by the lack of visibility on the exact scope of the test. ARDD solutions reduce the testing cost. They help focus on the useful requirements to be tested. They help balance testing frequency and iteration granularity, e.g. grouping the tests of several iterations without forgetting any requirements. Lastly, ARDD solutions increase the test value. They highlight which requirements are checked successfully or not, in business wording.

- **Business partnership management**

  The business partnership management process must guarantee the collection, understanding and processing of business needs. Collaboration of business units with the IT department often fails due to a lack of common wording and reference.

  The ARDD core value is the collection and management of business needs. ARDD solutions help guarantee common wording and understanding of the business needs shared by the various stakeholders. They are a key investment in order to bridge the gap between the business units and the IT teams.

- **Demand and project portfolio management**

  Demand and project portfolio management allows companies to align IT projects on their business strategy or priorities. It centralizes and manages all requests. These requests are compared, prioritized and planned according to cost, value or risk.

  ARDD solutions improve the decision making in project portfolio management. They can check whether that the projects overlap or not for a selected business need. They help optimize the selected projects compared to business needs. They help plan and prioritize projects according to requirements. They provide a finer granularity of project scheduling than the project demands.

  ARDD solutions increase the return on investment of each project, because they reduce project failures. They ensure alignment on the business needs at the best cost.

- **Maintenance**

  The maintenance process guarantees the definition of scope-limited changes. These changes must bring added value to the business, quickly and at low cost. A key challenge of maintenance is the guarantee of non-regression of existing information when budgets and time frames are tight.

©Yphise

Regression often results from a lack of visibility of the requirements impacted by maintenance. ARDD solutions improve the visibility of the purpose of each maintenance task. They improve the understanding of the requirements to be met after change. They manage the change of requirements consistently with the maintenance. This is why ARDD solutions reduce the risk for regression upon maintenance.

- **Outsourcing**

The outsourcing strategies process guarantees the effective use of outsourcing for projects, maintenance, operations or other services.

ARDD solutions are a key factor in improving the communications with outsourcers. They serve as a reference for agreement on the requirements that outsourcers must meet. This includes requirements that used to be missed by outsourcers, such as flexibility for maintenance. ARDD solutions provide collaboration tools that are useful for reaching an agreement. They decrease the cost for establishing agreements with outsourcers and controlling the fulfillment of these agreements.

- **Architecture**

The architecture process must guarantee that the information system is in line with the business strategy and business requirements. It must guarantee the functional and technical flexibility of the information system that must be kept in order to sustain this alignment over time. It is also aimed at organizing the information system in order to guarantee data integrity.

ARDD solutions decrease the cost of architecture involvement in projects. Architecture requirements must be taken into account in projects. ARDD solutions provide a durable shared repository for these requirements. This reduces the costs associated with missed requirements.

- **Security**

The security process guarantees the confidentiality, authentication, integrity and nonrepudiation of data, content and processes, as well as protection against security threats. Applications must be under control.

ARDD solutions decrease the cost of security involvement in projects. Security requirements must be taken into account in projects. ARDD solutions provide a durable shared repository for these requirements. This reduces the costs associated with missed requirements.

- **Service level management**

The service level management process guarantees the service levels of the information system in operations. Service level agreements are established especially for business operations, and demonstration of compliance with these agreements is required.

©Yphise

ARDD solutions help define, track and formalize the service level requirements according to the business need. They control whether requirements are met or not during the project. They provide a durable shared repository for these requirements. This reduces the costs associated with missed requirements.

- **Business continuity**

In case of failure or disaster, information systems must restart according to accurate time frames and conditions for the business processes.

ARDD solutions decrease the cost of business continuity involvement in projects. Business continuity requirements must be taken into account in projects. ARDD solutions provide a durable shared repository for these requirements. This reduces the costs associated with missed requirements.

- **IT risk control**

IT governance requires management of the risks that information systems represent for a company. Companies must guarantee compliance with regulatory requirements (e.g. the *Sarbanes-Oxley Act*). The IT risk management process identifies and assesses the risks in order to provide executives with an accurate understanding of the current situation. It defines and monitors the strategies for reducing the IT risk.

ARDD solutions guarantee compliance with regulatory requirements during the projects. They track the requirements according to business objectives. They can prioritize the requirements. They help decrease the risk due to the non-respect of legal obligations. They contribute to reducing the cost of controlling and auditing the project compliance with regulatory requirements.

- **Industrialization**

The industrialization process must ensure that the information system operates according to the service level expected by the business. In each application project, the industrialization process develops the operational tools and instructions required to deploy and operate. It designs and manages technical solutions aimed at guaranteeing the effectiveness in operations.

ARDD solutions decrease the cost of industrialization involvement in projects. Requirements for efficiency in operations must be taken into account in projects. ARDD solutions provide a durable shared repository for these requirements. This reduces the costs associated with requirements.

YPHISE SHORTLIST

Positioning of the market segment

The evaluated market segment is a specific one, with a precise positioning and list of software products. To avoid confusion, we differentiate it from the following list of market segments. A product belonging to one of these market segments is inappropriate for attaining the expected benefits.

- **IT investment and project portfolio management (IPPM) solutions**

  IT investment and project portfolio management (IPPM) solutions help manage all the requests resulting from business lines (e.g. requests for application and for projects, demand tickets). They also manage IT-specific activities, e.g. maintenance. They facilitate efficient selection among requests. They help correlate the requests according to business strategies or IT indicators, e.g. service levels, application performance, incidents. Thus, IPPM solutions make it possible to prioritize, plan and monitor the various projects according to cost, value or risk. IPPM solutions are essential in order to manage an information system according to IT governance requirements.

  ARDD solutions focus on conducting each project in line with the business requirements. They take into account the evolution and changes of requirements during projects. They track the whole lifecycle of the requirements. While IPPM solutions aim at deciding the portfolio of valuable projects, ARDD solutions aim at keeping each project aligned on business needs.

  E.g. Changepoint (Compuware), HP Project & Portfolio Management Center (HP), Planview Enterprise (Planview) and Rational Porfolio Manager (IBM).

- **Project management (PM) solutions**

  PM solutions help project managers manage their project.

  PM solutions focus on managing the tasks, resources, costs and schedule of projects. They do not manage the business needs and requirements. ARDD solutions do not manage resources and schedules.

  E.g. Microsoft Project (Microsoft), Open Workbench (CA) and Projectplace (Projectplace).

- **Test process optimization (TPO) solutions**

  TPO solutions manage the test definition, planning and execution. They manage both manual and automated tests. TPO solutions help project managers plan test cycles according to resource availability, environments, risks or sequence constraints. They provide executives and project managers with accurate monitoring of testing activities.

ARDD solutions focus on capturing, managing and refining the customer needs during the analysis and design phases. They also interface with TPO solutions in order to validate the completeness of each customer need during the testing phases.

E.g. CARS (Compuware), Quality Center (HP) and Silkcentral Quality Optimization (Borland Software).

- **Software development management (SDM) solutions**

SDM solutions provide version management of code during the lifecycle of a change. They manage the change process, from the request to the completion of each change. They provide release management of a series of changes.

ARDD solutions focus on capturing, managing and refining the business requirements. They do not manage the change process. Effective ARDD solutions interface with SDM solutions in order to prioritize and track changes according to customer needs. Each application change should be linked to related requirements.

E.g. Allfusion Harvest Change Manager (CA), Dimensions CM (Serena), ClearQuest/ClearCase (IBM Rational), Synergy (Telelogic) and Starteam (Borland Software).

- **Integrated development environment (IDE) solutions**

IDE solutions provide an environment for developing software. IDE solutions normally consist of a source code editor, a compiler and/or interpreter, build automation tools and a debugger. They provide facilities to programmers in order to centralize the tools required to develop software (requirements, testing and so on). They help improve productivity.

ARDD solutions focus on managing the requirements according to business needs. They do not take into account the development process during software design. However, IDE solutions rely on the requirements provided by ARDD solutions in the development environment.

E.g. Jbuilder (Borland), Visual Studio (Microsoft), Websphere Studio (IBM) and Eclipse.

- **Business processes and architecture modeling (BPAM) solutions**

BPAM solutions help IT and business architects model how companies run. They provide a graphical representation of the business processes, company organization, IT services, infrastructure architecture and application design. They manage the relationships and dependencies between all business and IT enterprise components. They support the impact analysis of changes of the business on the IT and reciprocally.

ARDD solutions focus on capturing and managing the requirements according to customer needs. They support the impact analysis of a change on the requirements and the consequences while conducting the projects. BPAM solutions analyze the changes in order to highlight architecture, security, service level or business continuity

requirements. ARDD solutions manage these requirements. They are complementary solutions.

E.g. Aris Design Platform (IDS Scheer), Corporate Modeler (Casewise) and System Architect (Telelogic).

- **Unified modeling language (UML) solutions**

UML solutions focus on detailing the design of services and applications in order to generate code.

UML solutions focus on the design of applications. They should interface with ARDD solutions during the design stages in order to guarantee the accurate coverage of the various requirements.

E.g. IBM Rational Rose (IBM Software), Tau Architect (Telelogic), IBM Rational Software Modeler (IBM Software) and Together Designer (Borland Software).

- **Model-driven development (MDD) solutions**

MDD solutions help generate applications automatically, including the user interface and appropriate documentation. The application generation usually relies on the UML model.

MDD solutions define models according to business requirements. ARDD solutions focus on capturing and managing the requirements according to business needs. ARDD solutions should interface with MDD solutions in order to check that the models are aligned on requirements.

E.g. OptimalJ (Compuware), Blu Age (Netfective Technology) and Rational Software Architect (IBM).

- **Test script generation automation (TSGA) solutions**

Automated test generation mitigates the risk of tests not being aligned on business requirements. It avoids manual actions, which can lead to errors, lost or missed requirements, twisted requirements and misunderstandings. It automates the test script generation based on modeling of the requirements.

TSGA solutions ensure that applications and services are correctly aligned on actual requirements. They ensure that the testing process is aligned on the requirements. ARDD solutions ensure that the conducting of projects is correctly aligned on business requirements. They do not manage the requirements. They do not control test consistencies. TSGA and ARDD solutions are complementary in order to ensure that the automated tests are aligned on the requirements.

E.g. Smart Testing (Leiros).

The shortlist for the evaluated market segment

Requirements management originally focused on industrial or large scale projects, with tight alignment issues on business needs. Flexibility used to be secondary in requirements management. Our previous assessments focused on requirement complexity management (2002, 2004 and 2006). This management remains a key issue. However, the situation has changed. Fast-paced IT projects have shown critical weaknesses in requirements management and in alignment on business needs. The need for requirements management tuned to agile development has grown in past years. Solutions in the marketplace have changed in order to improve the agility and flexibility of requirements management.

Our final shortlist focuses on vendors who demonstrate commitment in providing solutions which incorporate a flexible way of managing the requirements. The evolution of this marketplace is still ongoing, but we consider that it has attained a useful maturity for investment decisions.

Our final shortlist is as follows:

- Caliber Analyst (Borland);
- DOORS (Telelogic);
- IRqA (Visure);
- MKS Integrity (MKS);
- Optimal Suite (Compuware); and
- RequisitePro (IBM Rational).

➢ Caliber Analyst (Borland), Version 2006

Borland is a player in the application lifecycle management (ALM) market segment. Its solutions focus on four ALM processes: project and portfolio management; requirements definition and management; lifecycle quality management; and software change management.

Caliber Analyst is the Borland solution for requirements definition and management. Caliber Analyst is composed by Caliber RM for requirements management and of Define IT for graphical scenario definition.

➢ DOORS (Telelogic), Version 8.3

Telelogic focuses on providing solutions for managing the entire lifecycle of systems and software, from requirements to change management. Telelogic solutions are dedicated to ELM (Enterprise Lifecycle Management), i.e connecting business to development. The Telelogic ELM suite covers the following areas: business process optimization (BPO), application lifecycle management (ALM) and model-driven development (MDD).

DOORS is the Telelogic requirements management solution. It is part of ALM.

- **IRqA (Visure), Version 4**

  Visure help companies implement the requirements process in order to guarantee quality in products, systems and services.

  Visure is a new company specialized in requirements management and engineering. The company is a spin-off of TCPSI and has therefore inherited experience and maturity in requirements management.

  IRqA is the Visure requirements management solution.

- **MKS Integrity (MKS), Version 2007**

  MKS focuses on application lifecycle management (ALM). Its purpose is to facilitate handoffs between business, software development and IT operations, to manage, accelerate and provide visibility of activities at every project stage. This includes requirements management, up to final deployment.

  MKS Integrity is a single application that includes test management, requirements management, software development management and development project portfolio management.

- **Optimal Suite (Compuware), Version 5.0**

  Compuware focuses on providing performance to the IT. Its solutions manage the whole lifecycle of the applications and infrastructure, according to IT governance concepts.

  Compuware acquired Steeltrace in the second quarter of 2006 in order to meet requirements management issues. Compuware has achieved integration of OptimalTrace into its other solutions. The Compuware solution portfolio covers the application lifecycle, from requirements to change management.

  The Compuware ARDD solution is Optimal Suite. It includes OptimalTrace for requirements management, Optimal Delivery Manager for information delivery and QA Center for testing.

- **RequisitePro (IBM Rational), Version 7.0.1.0**

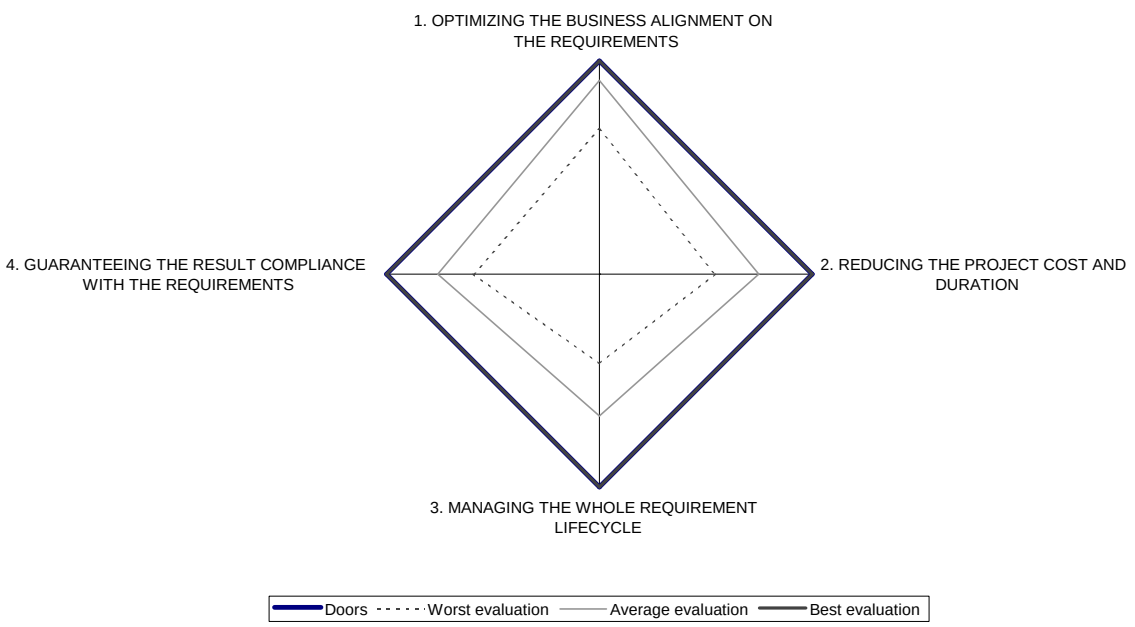
  Rational is the IBM software line dedicated to software development.

  RequisitePro is the IBM solution for requirements management. It is integrated into additional IBM products, e.g. Rational Software Modeler (for modelization and for collaboration definition) in order to manage requirement-driven development.

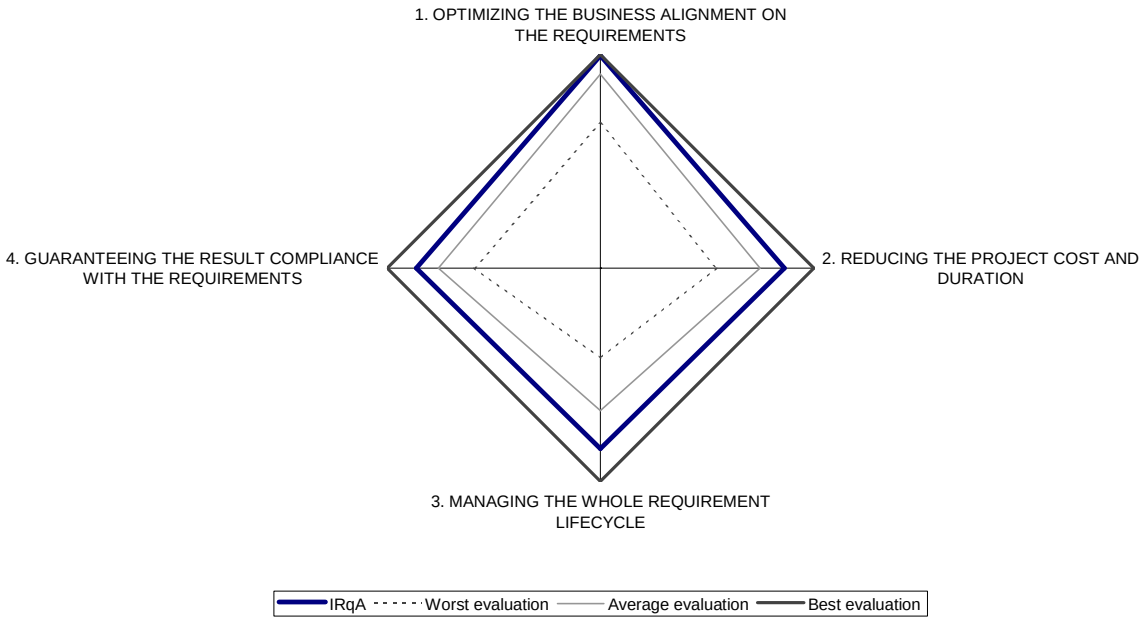
©Yphise

YPHISE RANKING

DOORS

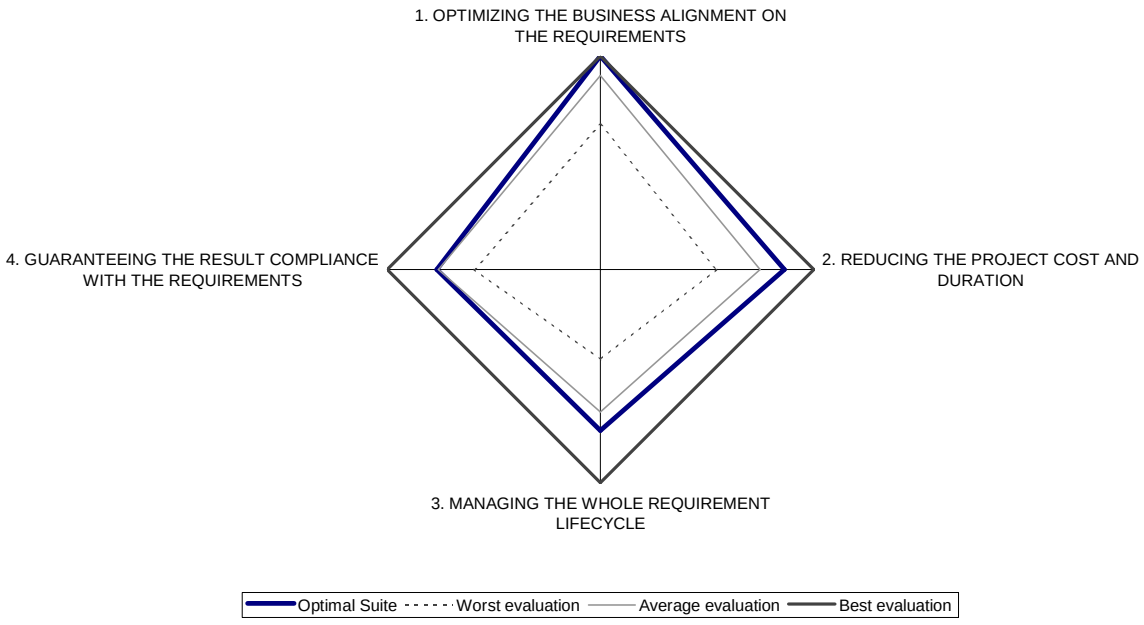


IRqA

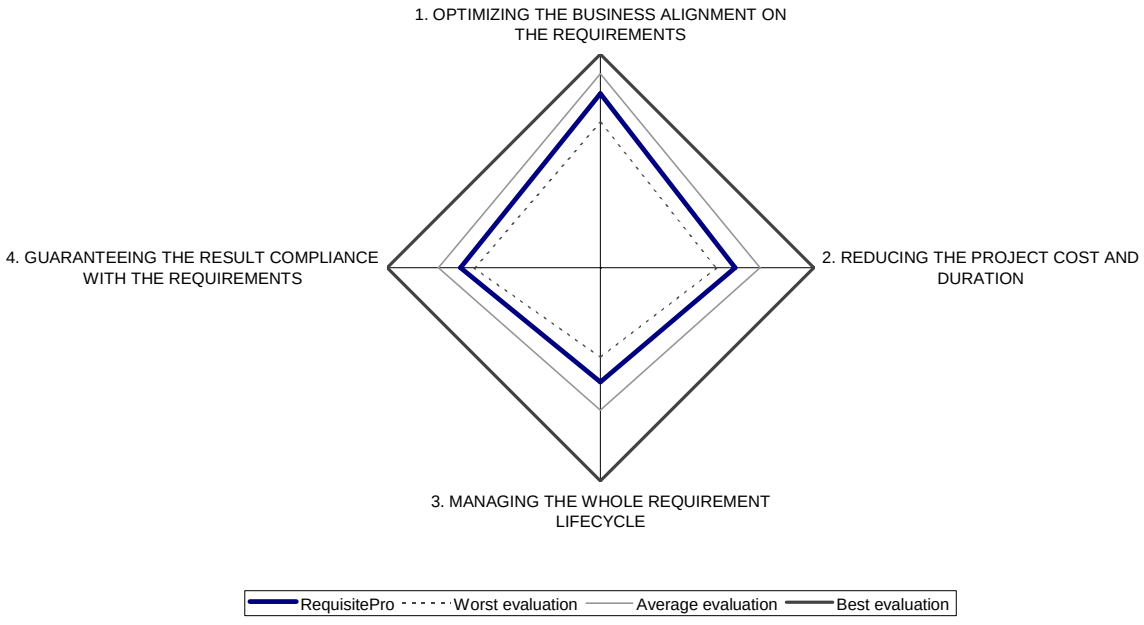


©Yphise

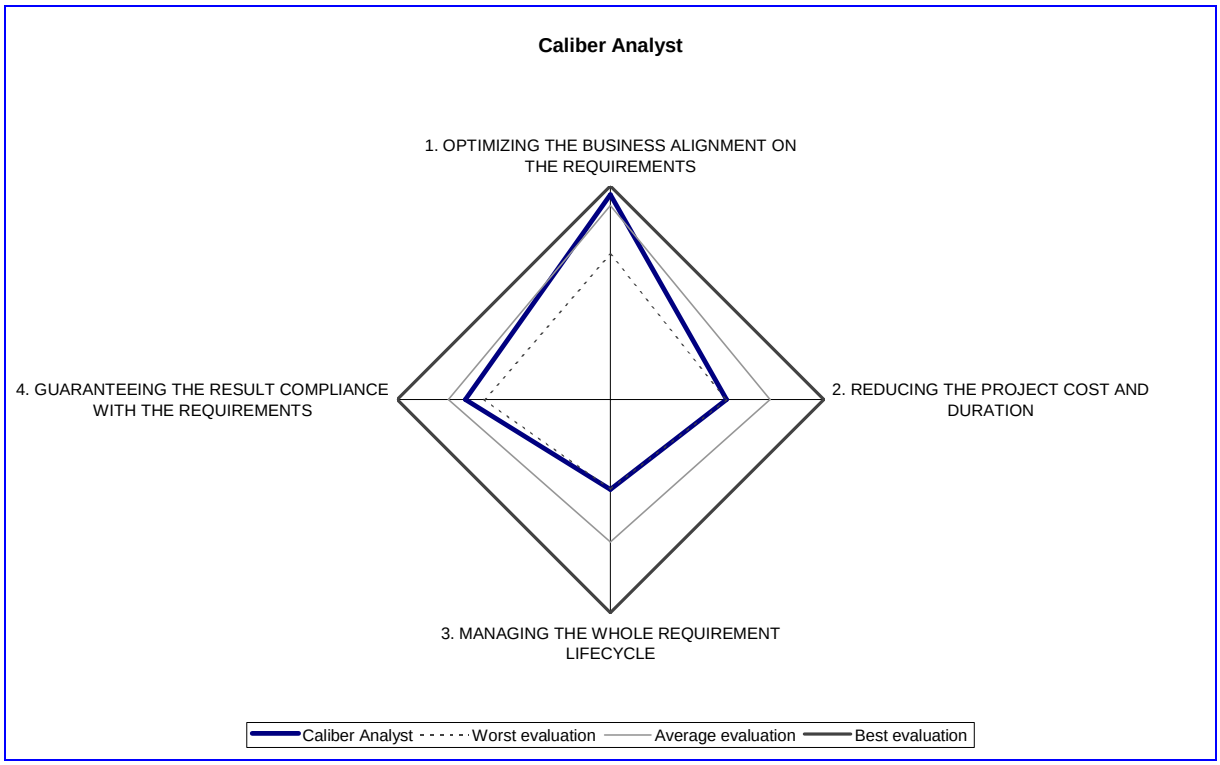
Optimal Suite

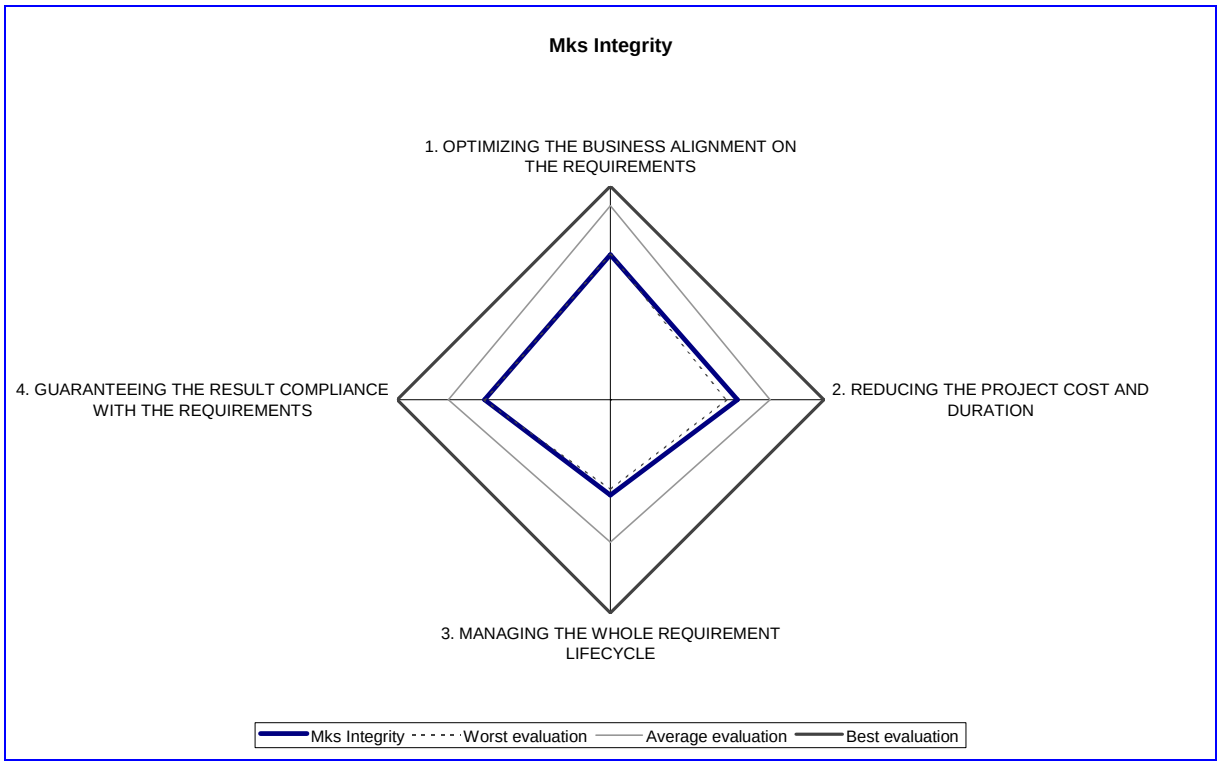


RequisitePro



©Yphise





The above charts are presented in order of final top-down ranking of the shortlisted products after their in-depth ISO 9001:2000-certified assessment by Yphise.

The four assessment dimensions show the expected benefits by large companies. They aggregate more than 150 functional or technical control items. This list of requirements is practical, in order to evaluate the capacity of the products to provide an adequate return on investment. It is also proactive in order to appreciate the upcoming perspectives.

Assessment dimensions

1. Optimizing the business alignment on the requirements

ARDD solutions help capture the business needs and refine them into functional and nonfunctional system requirements. They help select the scope of requirements as accurately as possible in order to keep them aligned on the business priority.

2. Reducing the project cost and duration

ARDD solutions ensure an appropriate project-conducting method in agile development while guaranteeing the result value. They ensure flexibility in projects upon changes in the project scope or requirements. They support collaboration of the various involved stakeholders. They ensure that information required to conduct the project efficiently is available, correct and shared.

3. Managing the whole requirement lifecycle

ARDD solutions track the requirements from definition to testing. They track changes to requirements during the project. They manage the lifecycle of the requirements. They manage and record the various versions of requirements. They provide dashboards in order to analyze the changes in requirements.

4. Guaranteeing the result compliance with the requirements

ARDD solutions check whether the project result complies with initial business needs and linked requirements. They check the non-regression in each project iteration. They interface with all the other software products involved in the project in order to ensure end-to-end consistency with the business needs. They detect suspect requirements or dependencies due to uncontrolled changes.

Comments

The detailed assessment of the shortlisted products demonstrates that the best ones have the strengths that would be useful for large companies and would represent a valuable investment. The assessment results demonstrate that the shortlisted products are valuable. However, there are significant differences among the products in the coverage of the different assessment dimensions.

We remind you that building a proof of concept in the targeted technical environment and for the expected value-added benefits remains a requirement.

- **DOORS (Telelogic)** provides the best coverage of our list of requirements. It stands out in our four assessment dimensions. DOORS demonstrates strengths in capturing, linking and analyzing the requirements during their whole lifecycle. We appreciate its capability to delegate control over the requirements to the users.

  This confirms the maturity and reliability of the solution for investing in this market segment. Our previous assessments highlighted DOORS' strength in requirements

management of complex projects and in system development (2002, 2004 and 2006). This assessment highlights how DOORS also stands out for fast-paced agile development projects. We appreciate the flexibility of the solution.

- **IRqA (Visure)** has very good coverage of our list of requirements. Its graphical interface provides clear and easy-to-use representation of complex requirements. We appreciate the solution's ease of use. The solution includes numerous out-of-the-box wizards, templates, reports and samples of workflows. We appreciate how IRqA easily and quickly translates customer needs graphically.

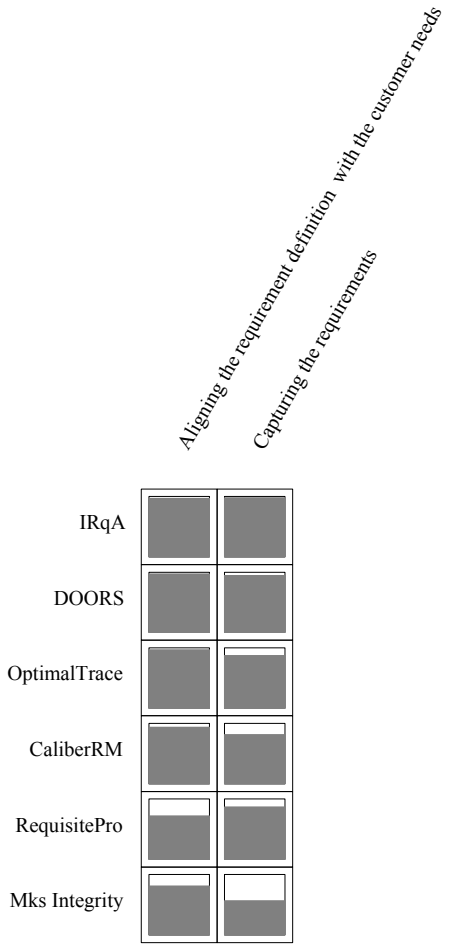
- **Optimal Suite (Compuware)** provides good coverage of our list of requirements. It embeds ChangePoint technology. This ensures accurate tracking of project progress according to requirement coverage. We appreciate the Optimal Suite overall flexibility for agile projects.

- **RequisitePro (IBM Rational)** provides useful functions in order to facilitate organization of the requirements. The solution has added value when used in conjunction with other IBM Rational software solutions. We appreciate the effective integration into complementary solutions from the same vendor. We also appreciate the variety and richness of the interfaces provided, e.g. database, Word, Web and Eclipse interfaces.

- **Caliber Analyst (Borland)** is a valuable solution. We appreciate the common shared repository and the various available interfaces personalized according to need. This facilitates the use and understanding of requirements.

- **MKS Integrity (MKS)** demonstrates advanced functions for managing the requirements throughout the application lifecycle. We appreciate the ease in sharing and reusing the requirements across various projects. This facilitates use and improves the cross-project consistency of requirements.

1. OPTIMIZING THE BUSINESS ALIGNMENT ON THE REQUIREMENTS



Sorted Aggregated Table

©Yphise

1. OPTIMIZING THE BUSINESS ALIGNMENT ON THE REQUIREMENTS

All the shortlisted solutions can capture easily the requirements from external sources. There is no significant difference among the shortlisted solutions in "Capturing the requirements". All the shortlisted solutions support flexible capture of the various requirements at each iteration if necessary. Some solutions facilitate the capture thanks to out-of-the-box templates.

There is no significant difference in "Aligning the requirement definition on the customer needs". This assessment dimension evaluates the agility in refining and creating the dependencies between the requirements while guaranteeing the traceability.

- **DOORS** provide the best coverage in this dimension. The solution provides many import/export capabilities. Capture can be performed according to filters, including text-based queries (e.g. contains or not, is equal or not, and so on). DOORS extension language (DXL) can be used to build import and export scripts for other tools in almost any format. DOORS stands out in "Aligning the requirement definition on the customer needs". Inheritance, URL links and the discussion forum are useful for ensuring flexible requirement definition. We appreciate the DOORS/TraceLine capability to track and browse graphically the dependencies.

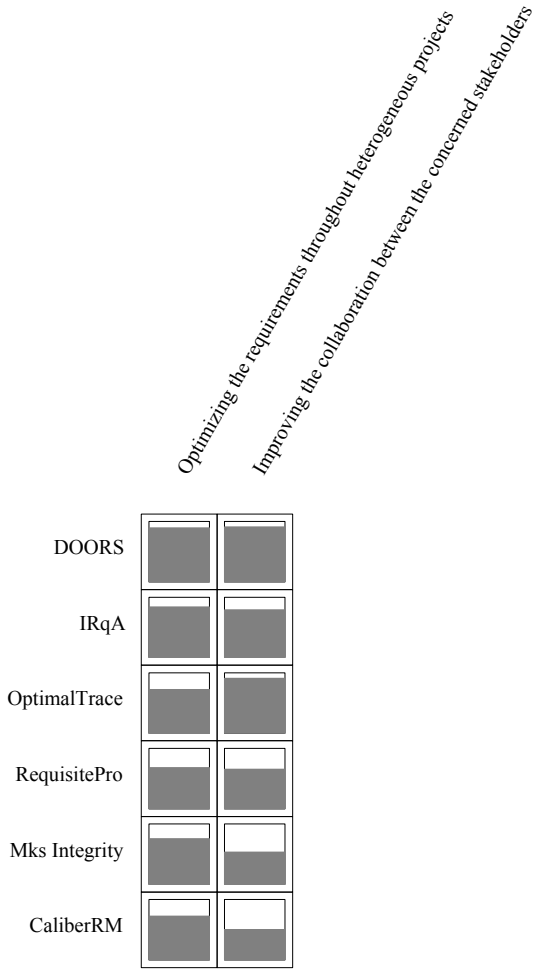
- **IRqA** ranks high in both dimensions. It stands out in "Capturing the requirements". IRqA is easy-to-use and flexible thanks to wizards for importing or updating of data from Word or Outlook. We appreciate the mapping of target columns with the source columns in order to import tables. We also appreciate the graphical representation of the requirements in order to make them understandable to nontechnical people. The solution is strong in representing easily the customer needs graphically.

- **Optimal Suite** ranks high in both dimensions. The solution is flexible in the defining of requirements. Requirement properties can be customized on-the-fly, even after the project has started. The solution provides strong requirement refining capabilities. We appreciate the native cross-projects and cross-iteration management of requirements.

- **RequisitePro** has a good Interface with MS Word. RequisitePro and MS Word share a common repository. The information is updated in real time. This guarantees the consistency of the requirements.

©Yphise

2. REDUCING THE PROJECT COST AND DURATION



Sorted Aggregated Table

©Yphise

2. REDUCING THE PROJECT COST AND DURATION

The shortlisted solutions support flexible organization of the projects. They allow to reuse templates and cross-project requirements. There are some differences in "Optimizing the requirements throughout heterogeneous projects". Differences are in scenario management, changes propagation and reliability of cross-project management.

The solutions provide discussion forums. They can also generate contract documents. There are some differences in "Improving the collaboration between the involved stakeholders". Differences are in change management and alerting. Some solutions require integration into other solutions.

- **DOORS** stands out in both dimensions. Telelogic Harmony provides an Open Unified Process (Open UP) to help conduct projects. It supports change submission, process guidance and role definition. We appreciate the accurate role-based access control, from the project level down to individual items. DOORS supports concurrent accesses and various access modes.

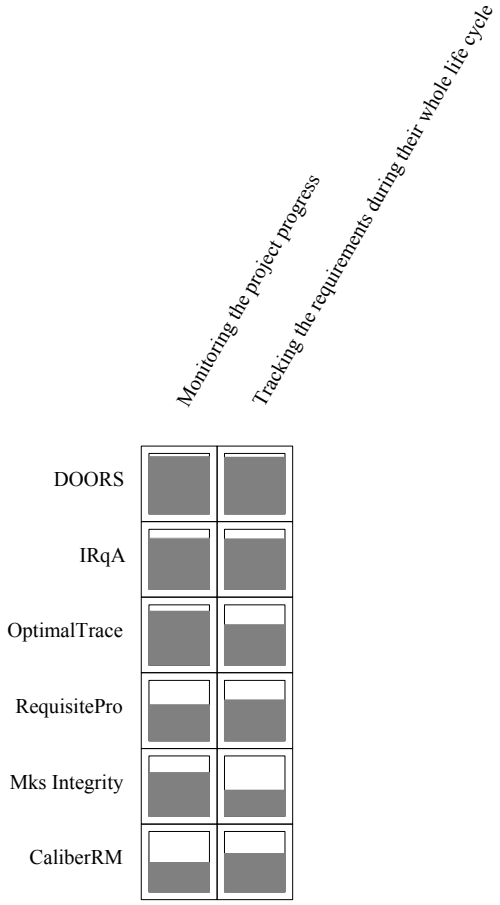
- **IRqA** demonstrates good coverage in both dimensions. We appreciate the out-of-the-box templates: they facilitate the definition of requirements. The solution also manages scenarios, i.e. a list of steps, including the users involved. It provides best practices for various business areas, e.g. microelectronics, automotive or CMMI. We especially appreciate the workflow that helps validation. Transitions are scripted. The solution provides a graphical representation of the requirement status, e.g. refused, approved, validated.

- **Optimal Suite** demonstrates good coverage in both dimensions. The solution manages concurrent accesses and supports various access modes. It records the changes. We appreciate the embedded Changepoint technology in order to define an accurate workflow and to manage the change requests, the involved stakeholders and the notifications.

- **MKS Integrity** ranks middle in those dimensions. We appreciate the reference to requirements in order to facilitate reusability. This avoids useless requirement duplication. This improves control over the changes.

©Yphise

3. MANAGING THE WHOLE REQUIREMENT LIFECYCLE



©Yphise

3. MANAGING THE WHOLE REQUIREMENT LIFECYCLE

There are differences among the shortlisted solutions in "Tracking the requirements during their whole lifecycle". All the solutions assign version numbers. However, they differ in capability to version each component of the projects and to compare versions.

There are significant differences between the shortlisted solutions in "Monitoring the project progress". Some solutions need integration into third-party software development management (SDM) or project portfolio management (PPM) solutions, while others natively meet the requirements of this dimension.

- **DOORS** stands out in both dimensions. It provides a flexible and easy-to-use version management of the requirements. Every change is recorded, and the solution provides a graphical comparison if necessary. DOORS manages external links, e.g. access to the requirement details by third-party tools. We appreciate the authentication when accessing the requirements from external sources. DOORS interfaces with Focalpoint for efficient project conducting. We appreciate how wizards facilitate the creation of metrics.

- **IRqA** ranks high in both dimensions. The solution provides "block diagrams", i.e. a graphical representation of the requirement lifecycle. This representation is available anywhere in the solution. This facilitates the tracking of requirements. IRqA also provides wizards for metrics. IRqA can drill down easily, from the metrics to the involved requirements.

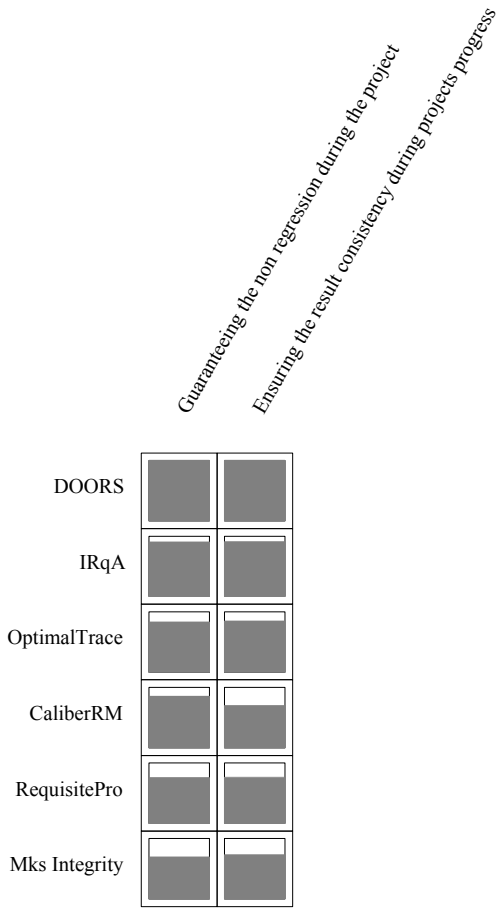
- **Optimal Suite** ranks midway in "Tracking the requirements during their whole lifecycle", and it demonstrates good coverage in "Monitoring the project progress". The solution provides many reports in order to analyze the business impact of the project, e.g. Traceability Matrix Report, Complexity and Completeness Report.

- **Caliber Analyst** ranks midway in both dimensions. We appreciate the accurate cross-projects traceability matrix. The solution provides a wizard to define traceability filters useful for configuring the matrix easily.

- **MKS Integrity** ranks midway in both dimensions. We appreciate the several views available, e.g. list view, hierarchical tree view and traceability report that represents the whole lifecycle of the requirements.

©Yphise

4. GUARANTEEING THE RESULT COMPLIANCE WITH THE REQUIREMENTS



©Yphise

4. GUARANTEEING THE RESULT COMPLIANCE WITH THE REQUIREMENTS

There are minor differences in "Ensuring the result consistency during the project progress". The solutions highlight the changes and detect the suspect links. The differences are in the test tracking and the seamless integration, despite agile projects.

There are minor differences between the shortlisted solutions in "Guaranteeing the non-regression during the project". The differences are in the management and impact analysis of the baselines.

- **DOORS** stands out in both dimensions. DOORS supports two tracking methods of the test results. First, the so-called "test tracking tools" provide embedded native test tracking. Second, a seamless bidirectional real-time integration into HP Quality Center is available. We appreciate the DOORS baselining, e.g. the "Track compare module", which can compare graphically several baselines. We appreciate the anomaly detection in the requirement expressions. Words or expressions can be stored and described in a dictionary. Links to the dictionary are available as soon as the word is found.

- **IRqA** ranks high in both dimensions. The solution provides seamless bidirectional integration into test management tools such as HP Quality Center. We appreciate the detection of anomalies on requirements provided by "Quality analyzer". The solution controls the scope of checking and the exclusion of selected words, and it offers some context-based suggestions.

- **Caliber Analyst** ranks midway in both dimensions. It detects inconsistent expressions through unlimited glossaries with definitions.

The ASSESSMENT volume provides the detailed assessment of each shortlisted product.

©Yphise

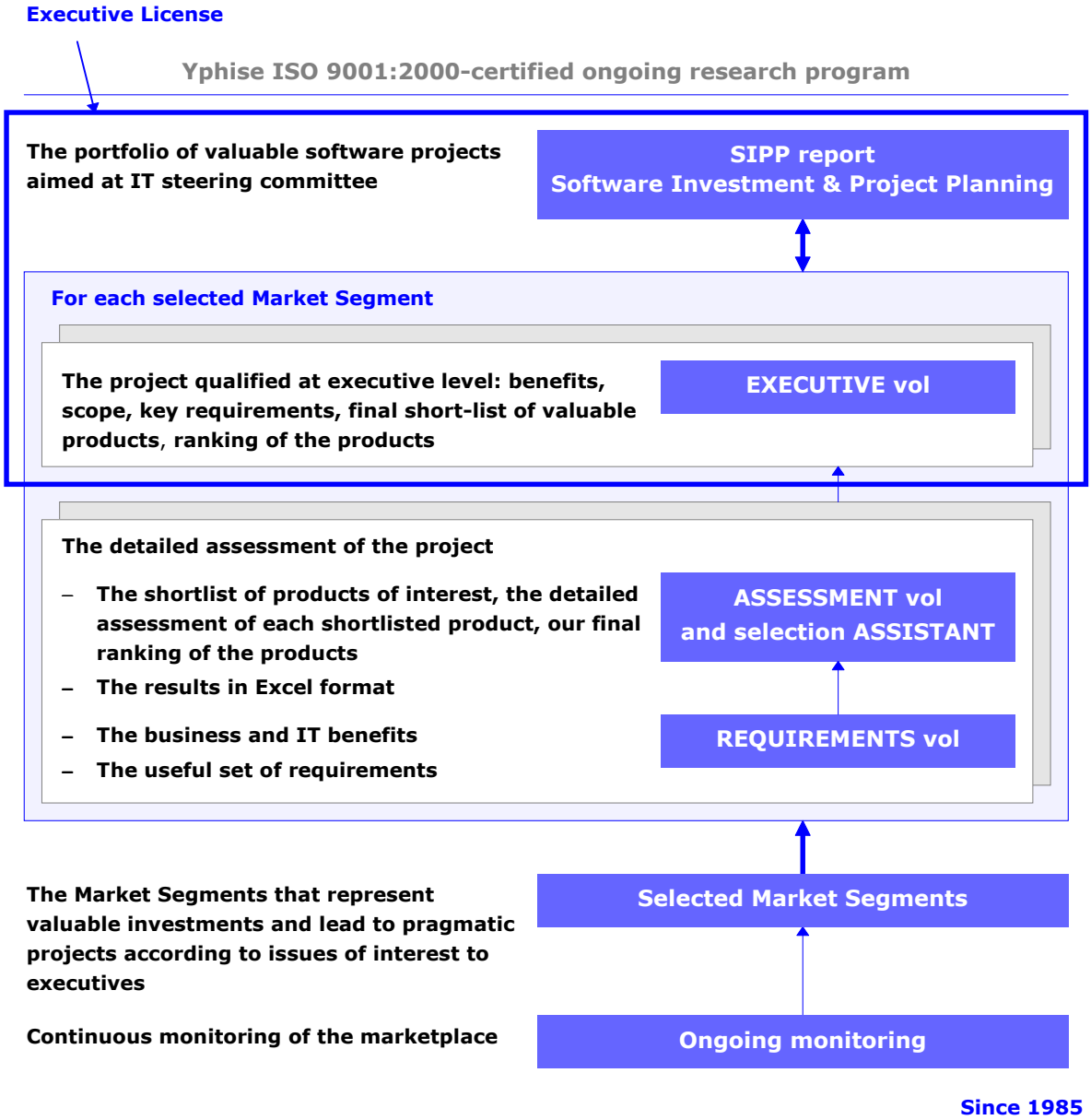
APPENDIX: YPHISE EXECUTIVE LICENSE

The Executive License

The Executive License allows for effective monitoring of the software market according to the requirements and priorities of large companies.

The Executive License is the most effective way of gaining the best value from Yphise unique independent research program.

The Executive License grants IT executives, software vendors and service providers online access (at www.yphise.com) to all the 12 EXECUTIVE volumes and to the SIPP (Software Investment & Project Planning) reports released during the year.



©Yphise

Order form

The Executive License provides you online access (at **www.yphise.com**) to all the 12 EXECUTIVE volumes to be released in the next 12 months and to the SIPP report. We will notify you by email of the release of each new EXECUTIVE volume and of each new release of the SIPP report.

You can also use this credit in order to purchase access to EXECUTIVE volumes already available (e.g. when you purchase access to 2 EXECUTIVE volumes, you will have access to the 16 - 2 = 14 upcoming volumes). The cost is only 1880 (US$) including the first three seats. Each extra seat is only 47 (US$).

Company
Name
Title
Email
Phone
Street
City
Zip Postal code
State - Country

Extra seats

Name - Title **Email**
Name - Title **Email**
Name - Title **Email**
Name - Title **Email**
Name - Title **Email**

We will confirm by email that your order has been received and processed. A paper invoice will be sent for each order.

Name

Date

Signature

Yphise, P.O. BOX 142, Southbury, CT 06488 - USA / T 1 203-405-2549 - F 1 203-405-2569
Yphise, 6 rue Beaubourg - F-75004 PARIS / T (33) 1 44 59 93 00 - F (33) 1 44 59 93 09
yphise@yphise.com - You can also order and pay at **www.yphise.com**