



Application Portfolio

Thinking Portfolio® White Paper

*Federated Single-Sign-On
Thinking Portfolio and EU Data Protection
Efficient reporting – A summary of the current status and
future of the portfolio
ADFS User Management*

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Thinking Portfolio

– A tool for Strategic Management

Thinking Portfolio® is a practical tool for strategic management. The portfolio management model supports business-driven planning and decision-making based on a firm overall grasp.

The starting points for the development of the concept have been project work and international frameworks for portfolio management such as PRINCE2, PMBOK and SAFe 4.0.

An organization implementing Thinking Portfolio is well-equipped for fast decision-making, agile change management, enhanced business drivenness, and risk management.

Thinking Portfolio's straightforward visual presentation method and browser-based user interface speed up its adoption. The use of the system requires no special training or manuals.

Thinking Portfolio has been developed by utilizing the latest Web technology.

The browser interface work with the latest versions of Internet Explorer 11, Edge, Firefox, Chrome, Safari, and with leading tablets.

The technical solution facilitates the implementation of various portfolio management applications. The portfolio application presented here is a strategic level management tool for development projects.

Benefits of Thinking Portfolio

Well-equipped for fast decision-making

Agile change management

Risk management

The screenshot displays the Thinking Portfolio web application interface. At the top, there is a navigation bar with the logo and menu items: PORTFOLIO, SCHEDULE, QUALITY, DASHBOARD, REGISTERS, and MY DASHBOARD. Below the navigation bar, there is a search bar and a 'Show All' button. The main content area is titled 'Application portfolio' and contains a table with the following columns: Portfolio, System name, System entity, App. owner, ICT-owner, Service manager, Life cycle phase, Costs from previous year, Criticality, Value for business, Action, Functional quality, and Dependencies. The table lists various projects, such as 'Thinking Portfolio Demo Sove Virtual Reality 3D Catalog', 'HRM', 'Zorg', and 'Finance', with their respective owners, managers, and criticality levels. The criticality levels are color-coded: Low (A-level) in green, Normal (B-level) in yellow, Very critical (D) in red, and Critical / severe in orange.

Portfolio	System name	System entity	App. owner	ICT-owner	Service manager	Life cycle phase	Costs from previous year	Criticality	Value for business	Action	Functional quality	Dependencies
Thinking Portfolio Demo Sove Virtual Reality 3D Catalog			Chino Kobin	Lankela Kaarlo	Skrof Kirsti	Active development	2€	Low (A-level)	36	Tolerate	3	
Thinking Portfolio Demo Sove New application												
HRM	Chpdocsier		Kooter Erik de	Fok Pim	Roos Aale	Maintenance	16 000€	Normal (B-level)	34	Abandon	4	
Zorg	Patient Dossier		Fok Pim	Jan. Barends	Kooter Erik de	Active development	10 000€	Very critical (D)	34	Tolerate	2	
Thinking Portfolio Demo Sove Opettajarekisteri												
Thinking Portfolio Demo Sove Funds Management			Chino Kobin	Ahopelto Kari	Kokki Valno	Active development	15 000€	Critical / severe	36	Abandon	2	
Thinking Portfolio Demo Sove Henkiloikuntarekisteri												
Thinking Portfolio Demo Sove Profitability Analysis								Normal (B-level)	85	Renew	0	
Thinking Portfolio Demo Sove Payroll						Maintenance		Critical / severe				
Thinking Portfolio Demo Sove Thinking Portfolio Sovellusall			Kooter Erik de	Jan. Barends	Kokki Valno	Maintenance	750€	Normal (B-level)	82	Invest	4	
Thinking Portfolio Demo Sove Suussa sulava												
Finance	Basvare etnivoice		Roos Aale	Palmu Frans	Brennan Chrisann	Maintenance	20 000€	Normal (B-level)	51	Invest	2	
Thinking Portfolio Demo Sove SAP HANA			Lehtil Matti	Lankela Kaarlo	Topo Reino	Maintenance	114 000€	Normal (B-level)	22	Abandon	2	
Thinking Portfolio Demo Sove Fleet Management		Palkanlaskenta	Lankela Kaarlo	Virta Toto	Palmu Frans	Active development	3 000€	Low (A-level)	56	Invest	3	
ICT	SAP IM		Brennan Chrisann	Skrof Kirsti	Virta Toivo	Active development	60 000€	Critical / severe	60	Invest	2	
Thinking Portfolio Demo Sove Robo-Warehouse Managemen			Chino Kobin	Brennan Chrisann	Kokki Valno	Development	84 500€	Normal (B-level)	54	Renew	4	
Thinking Portfolio Demo Sove Banking & Loans						Active development		Critical / severe				
Thinking Portfolio Demo Sove SAP IM (Testymparisto)			Brennan Chrisann	Skrof Kirsti	Virta Toivo	Active development	60 000€	Low (A-level)	41	Abandon	2	
Thinking Portfolio Demo Sove SAP FI						Active development	107 000€	Low (A-level)	49	Tolerate	2	
Zorg	Quality Management		Brennan Chrisann	Powell Laurene	Chino Kobin	Removed	25 000€	Very critical (D)	23	Abandon	3	
Thinking Portfolio Demo Sove Thinking Portfolio Palvelusalk						Maintenance	12 500€	Normal (B-level)	80	Invest	4	
Thinking Portfolio Demo Sove SAP SCM						Shutdown	125 000€	Critical / severe	47	Tolerate	2	
Thinking Portfolio Demo Sove RT_MOKO						Maintenance		Very critical (D)	6	Abandon	3	
ICT	Basvare		Roos Aale	Kooter Erik de	Lankela Kaarlo	Maintenance	20 700€	Low (A-level)	48	Abandon	3	
Thinking Portfolio Demo Sove Global Trade Services						Active development	15 000€	Normal (B-level)	51	Renew	0	
ICT	Master Data Management					Maintenance	175 000€	Normal (B-level)	87	Invest	2	
Thinking Portfolio Demo Sove Supplier Relationship Manage						Maintenance	13 500€	Normal (B-level)	36	Abandon	2	
Thinking Portfolio Demo Sove Thinking Portfolio Projektsalk						Maintenance	10 000€	Normal (B-level)	78	Invest	4	
Thinking Portfolio Demo Sove SAP CO						Maintenance	21 000€	Critical / severe	83	Renew	3	

Strategic Portfolio Management

– Ideas, projects and assets

Using portfolios as a management tool is growing in popularity. Its purpose is to bring consistency, efficiency and transparency to management and decision-making.

Why Portfolio Management?

Transparency to management

Boost the efficiency of advance planning

A tool for risk management

The management of wide-ranging and multifaceted organizations is often complicated by the discrepancies between customer demands and expectations, problems with the flow of information, and a shortage of skilled professionals. This results in projects, overlapping and competing for the same resources, whose timing or content has not been optimized in any way; the link between practical execution and the core business strategy is often unclear.

Portfolio management is an operations model that attempts to alleviate the problems associated with fast-paced and multidimensional management. It creates operational prerequisites that at their best boost the efficiency of advance planning, decision-making, and implementation (Figure 1). Portfolio management consists of knowledge, processes and roles.

Portfolios are a specified way to pinpoint the resources and projects that will enable an organization to implement its strategy. There are three main types of management portfolios (Figure 2):

1. **The Development Portfolio** contains descriptions of the development proposals, ideas, and scenarios (for example development programs) aiming at the organization's future.
2. **The Project Portfolio** contains projects and their sub-projects that are planned, underway, or completed.
3. **The Asset or Resource Portfolio** contains, for example, applications, skills or processes that the organization has obtained for its use through development projects and investments.

The portfolios are interconnected; project proposals from the Development Portfolio are imported to the

Project Portfolio. The Project Portfolio generates an asset. Diminished property assets or poor performance generate development needs, and so forth.

The management principle

At its simplest, portfolio management is a question of managing and balancing earnings, investments, and risks. Earnings can be, for example, cost savings, a growth in productivity, the acquisition of new custom, or increased net sales. Investments also include the use of time and money; these include project work, training, start-up and maintenance.

There are many project risks, but also risks related to existing property, for example, the scalability of an ICT application or system in the growth or contraction of business operations.

Portfolios' connection to strategy and architecture

The portfolios are intermeshed through the organization's strategic criteria and classifications. Senior management defines the strategy's success factors and key results that are then described in the portfolios as separate criteria that are used to evaluate an idea, project, or application strategically.

Within the portfolios, identifying the equivalency between a project or property and its business, information, application and technology architecture is essential. For example, a certain new custom information system could adequately support an organization's strategy, but it might be incompatible with current application and technology architecture.



Figure 1. Project portfolio management principles

Success factors

The adoption of portfolio management can be a project, but its integration as part of an organization's daily operations requires a focused commitment and examples set by management. Portfolio management must become a part the organization's leadership, for example, as part of the executive group's work.

An organization's level of maturity has significance if portfolio management is to succeed. If there are substan-

tial deficiencies in leadership skills or project operations, portfolio management will remain without a basis. The portfolios will be worthless if an organization lacks the ability to function according to their requirements.

Portfolio management requires tools for its support. Here as well, the tools are not the solution, but they support changes in ways of thinking.

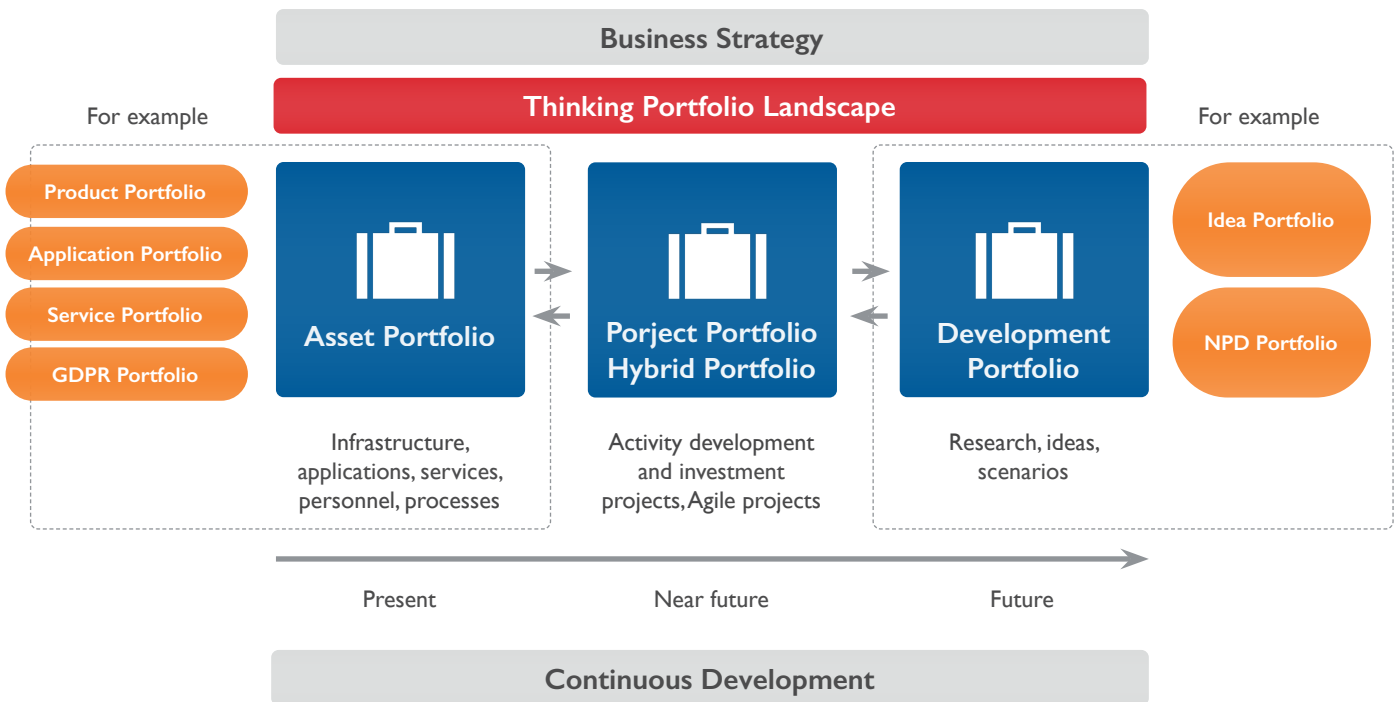


Figure 2. The strategic portfolios

Thinking Portfolio®

– The Main Views

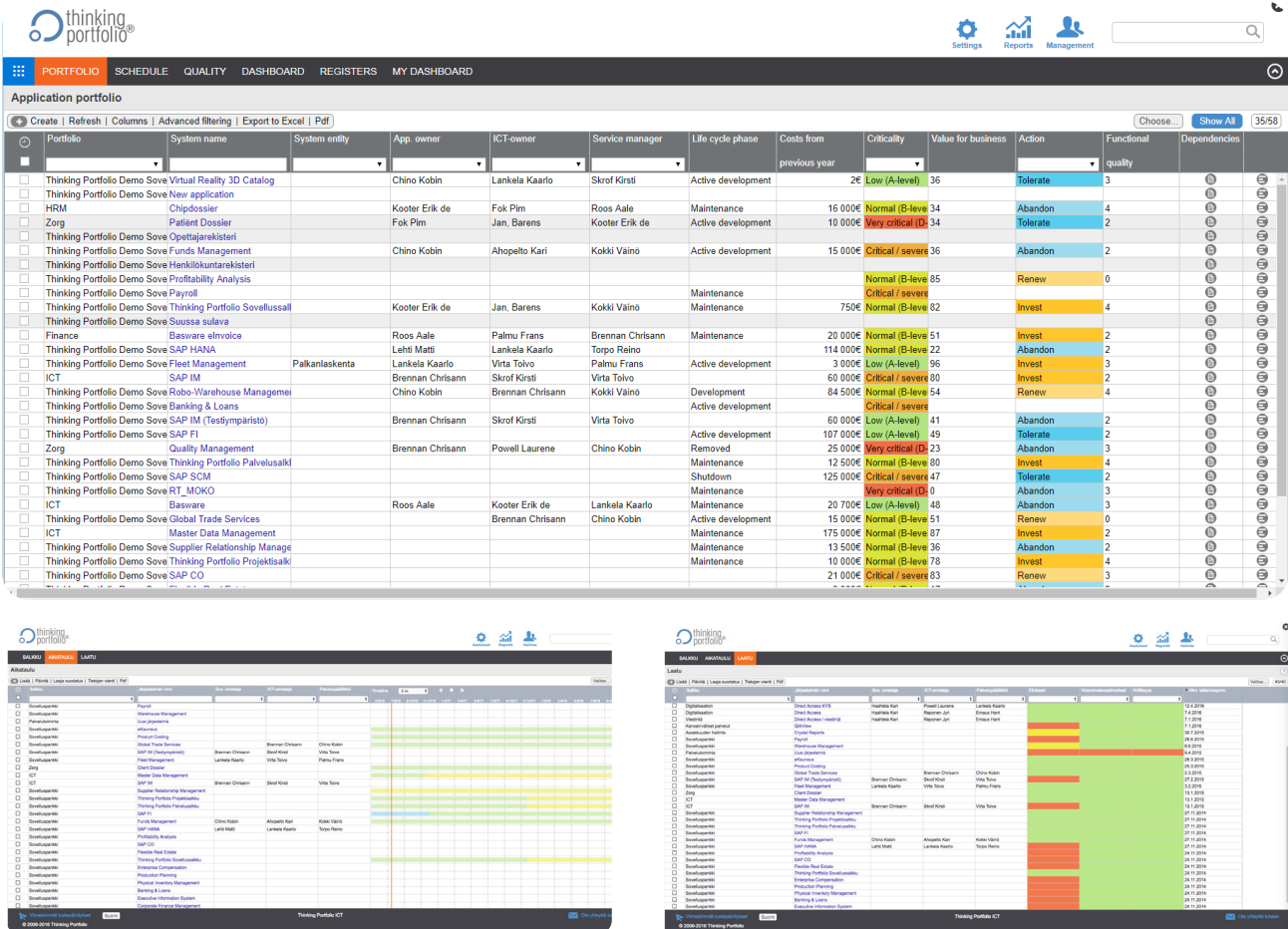


Figure 3. Portfolio, Time, and Quality views

Lists

The application list provides an overview of the portfolio (Figure 3). It contains applications which the user can view, or modify, depending on their user rights. Color coded fields indicate the SLA classification, priority or criticality of the applications.

The title bar enables the list to be sorted or filtered according to chosen criteria. The applications can be, for example, sorted by criticality or owner with a single click. Furthermore, the user can choose to display only applications of interest to them by selecting several criteria simultaneously.

Made selections are retained even if the user exits the application.

Time

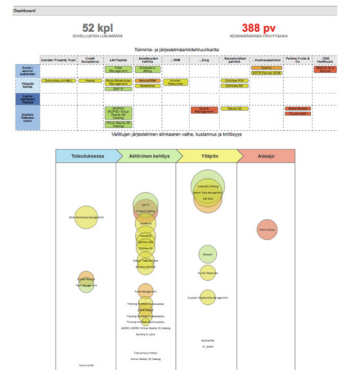
The Time view visualizes key dates in the life cycle of the applications, such as version updates and various audits.

Dashboard

Dashboard provides fast and easy view to the most important portfolio reports.

Quality

The Quality page of Thinking Portfolio indicates the amount and the status of available information on applications contained in the portfolio.



Application-specific Information

– Examples

Information related to each application or service is maintained on the so-called application card (Figure 4). The card consists of tabs itemizing the information from various perspectives. The tabs contain widget panels grouping the information both visually and logically.

The following section contains examples of commonly used widgets.

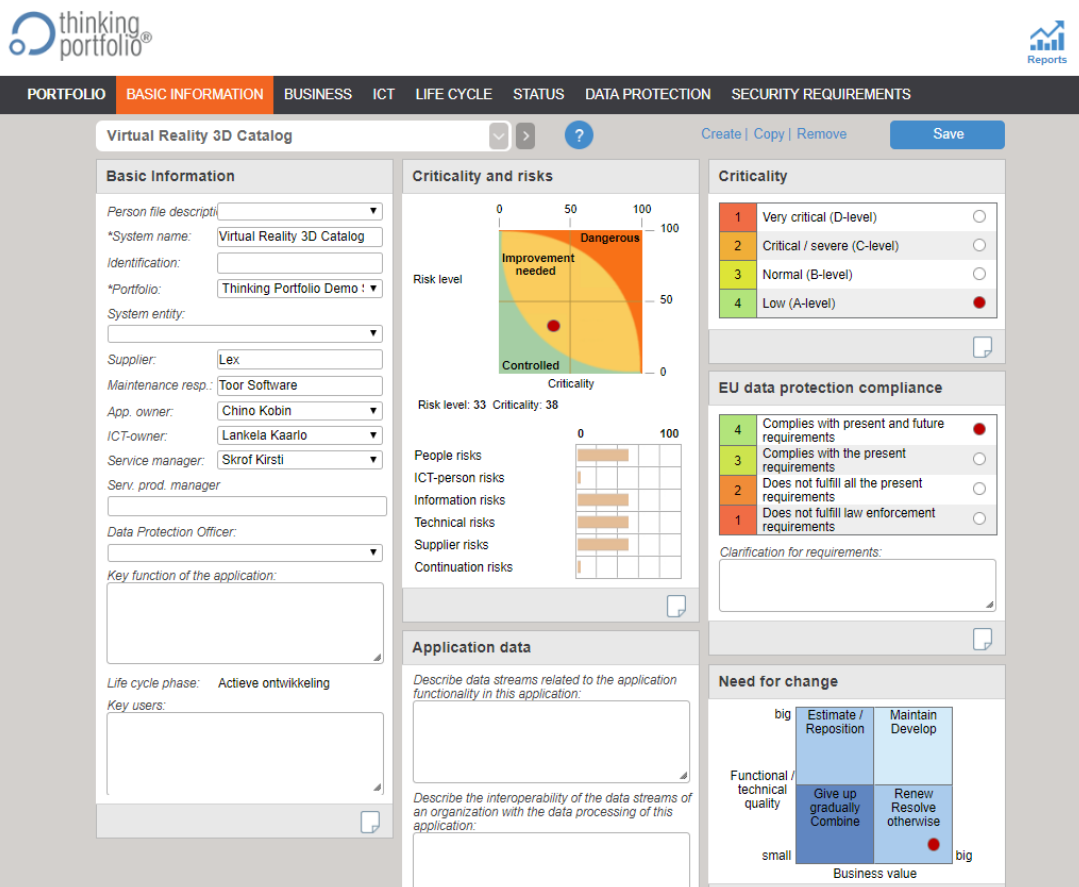


Figure 4. Basic information

Business-related positioning

The positioning of the application determines its business-related significance. The positioning is executed with a fourfold table (Figure 5):

Support applications provide indirect business value. These applications are not critical in terms of sustainability of the business. The amount and costs resulting from these applications should be minimized.

Business-critical applications are operative necessities, the sustainability and reliability of which are essential.

Strategic applications are applications that provide competitive advantage



Figure 5. Business position

currently and in the near future. These applications should be enhanced and developed in order to maintain competitive advantage.

Potential applications are potential assets which have not yet been implemented extensively.

The role of applications in service architecture

The widget (Figure 6) illustrates how an application supports various services (lines) of the organization and units (columns; e.g. group and various business units). By clicking check boxes in the matrix, the user can create links to the related service and organization.

Service and organization labels are always defined client-specifically.

Criticality and risks

In terms of application risk management, it is essential to map the criticality and possible risks related to the application. This widget provides a graphical display of how well the risks related to the application are managed in relation to its criticality (Figure 8).

By default, the risk level definition contains the following six aspects:

- User-related personal risks
- ICT-related personal risks
- Information risks
- Technical risks
- Supplier-related risks
- Sustainability risks

The user defines each risk level with a pop-up form containing assessment statements.

The widget automatically determines the level of criticality based on the Business-related positioning widget information.

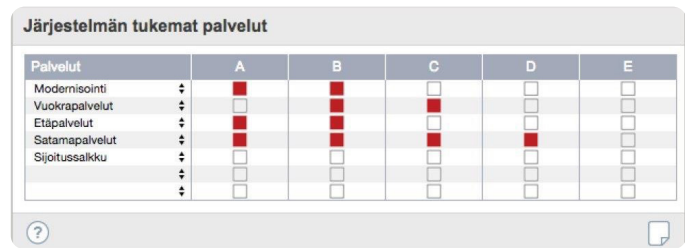


Figure 6. Application's position in the service architecture

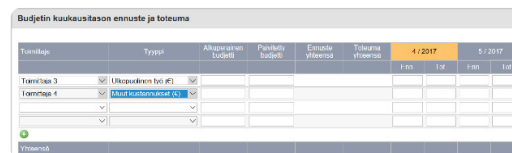


Figure 7. Criticality and risks

Risk analysis

1. People risks

Level	Description	Present level
2	<ul style="list-style-type: none"> There are no shortcomings in the admin user's skills or knowledge, or in the substitute arrangements There are enough skilled application users or experts in all situations 	<input type="radio"/>
1	<ul style="list-style-type: none"> The admin user of the application has a substitute, but he/she needs further training There are not enough skilled application users or experts for states of emergency 	<input checked="" type="radio"/>
0	<ul style="list-style-type: none"> The admin user of the application only has a nominal substitute There are not enough skilled application users or experts 	<input type="radio"/>

ICT-personnel risks

Level	Description	Present level
2	<ul style="list-style-type: none"> There are enough technical experts and their substitutes for the system or application in all situations 	<input checked="" type="radio"/>
1	<ul style="list-style-type: none"> There are too few technical experts and their substitutes for the system or application in states of emergency 	<input type="radio"/>
0	<ul style="list-style-type: none"> There are too few technical experts and their substitutes for the system or application Only a nominal substitute 	<input type="radio"/>

3. Information risks

Level	Description	Present level
2	<ul style="list-style-type: none"> The data in the application is always up-to-date or error free from the technical solutions' point of view The security requirements of the application are fully met The information model and contents have been completely documented 	<input type="radio"/>
1	<ul style="list-style-type: none"> The timeliness and correctness of the application's data can be technically verified up to 90 % The security requirements of the application can be fulfilled almost fully The documentation of the information model and contents is not complete 	<input checked="" type="radio"/>
0	<ul style="list-style-type: none"> The data in the application is not always up-to-date or error free because of technical reasons e.g. due to unreliable data transfer All the security requirements of the application can't be met The information model and contents have not been documented 	<input type="radio"/>

4. Technical risks

Level	Description	Present level
2	<ul style="list-style-type: none"> The application is fully functional, or the problems are totally managed The application architecture is in compliance with the organization's standards 	<input type="radio"/>
1	<ul style="list-style-type: none"> There are problems in the operation of application, but their reasons are known The causes of the problems with the application have been identified, but they have not been resolved satisfactory There are features in the architecture or integration of the application (e.g. the integration method or dependency on other systems) that do not meet with the standards of the organization, but they don't cause quality problems 	<input checked="" type="radio"/>
0	<ul style="list-style-type: none"> There are sporadically emerging problems in the operation of application The cause of every problem in using the application has not been identified There are features in the architecture or integration of the application that do not meet with the standards of the organization, or they cause quality problems 	<input type="radio"/>

Figure 8. Risk analysis

Compliance with Requirements

The ability of applications and services to meet business, user and technical requirements is constantly changing. As various parties may have different views on compliance with requirements, the same widget is depicted on separate tabs for each respective party on the application card (Figure 9).

The widget has a four level scale. Additionally, similar to other widgets, the user may specify their assessment by entering a short comment on the note card of the widget. The memo card can be opened by clicking the arrow icon located in the lower right corner of the widget. If the widget includes notes, the arrow icon changes to an exclamation point, as seen in the figure.

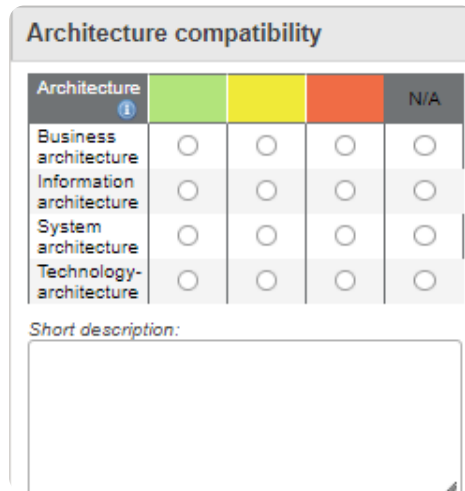


Figure 9. Architecture compatibility

Developmental needs

The information provided the aforementioned widgets helps map developmental needs of applications and services. These needs are indicated with a dedicated Developmental needs widget (Figure 10).

The widget contains a fourfold table containing Business value and Functional/ Technical quality dimensions. The user performs an assessment of the current status of the application in relation to the aforementioned dimensions by placing a red indicator on the fourfold table.

This seemingly simple assessment provides an interesting summary when the status of each application is reported in one diagram.

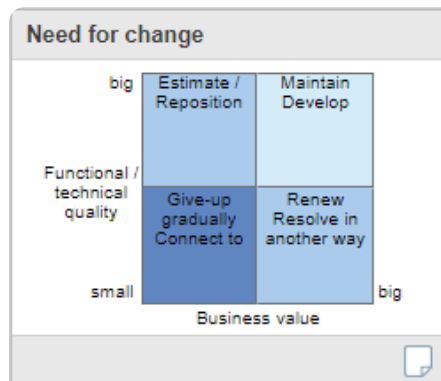


Figure 10. Developmental needs

Connections and their criticality

Today's information systems are rarely stand-alone entities. The Connections widget (Figure 11) depicts the connections of an application to various systems.

Information depicting connections include, for example, whether the system is internal or external, the level of criticality of the system, and the data flow direction of the connection.

Application	Dependency	Dependency type	Criticality	Description
Enterprise Compensation	Delivers	Manual	Critical	
Banking & Loans	Receives	Schedule	Normal	
SAP CO	Both	Message	Important	

System dependences mapping
Other dependences

Figure 11. Dependencies

Schedules

Applications contain various time-related information. There is a dedicated widget for recording time information (Figure 12). The widget enables the user to define various events, such as version updates or development discussions, which the information administration handles together with the owner of the application. Dates and event descriptions are recorded in a diary (Figure 13).

Life cycle phases

Life cycle phase: **Actieve ontwikkeling**

Implementation: 3.11.2004

Active development: 15.11.2014

Maintenance: 10.11.2019

Expected shutdown: 15.11.2024

Removed from production:

Archived:

Roadmap input

Roadmap

Privacy policy

Figure 12. Life cycle phases

Financial information

The Cash Flow widget (Figure 15) illustrates the life cycle finances of the application. The view includes itemization of costs data from a five-year period, but the widget is able to record data from a longer period as well.

Other widgets

Other widgets are available for managing, for example, user and administrator information, terms of agreements and application server data.

Diary

Application requirement review

Application functionality requirement reviewed. Agreed to proceed and start product evaluation based on defined requirements.

Review date 16.8.2018

Figure 13. Diary

Value and benefits for business

Value for business: 34

Business benefit and competitive advantage

Figure 14. Value and benefits for business

Life cycle costs (Budget)

	2017	2018	2019	2020	2021	Total €
Development €						
Maintenance €						
Needed licences €						
Minor development €						
Production €						
Other costs €						
Total €						

Attachments:

Figure 15. Life cycle costs

Reporting

- Examples

The Thinking Portfolio reports provide the management with a summary of the current status and future of the portfolio.

A so-called Application Charter (Figure 16) can be printed for each application. The document depicts all recorded application data within a single report.

The content and display method of the reports depend on their purpose, which is why the reports are always customized client-specifically.

Possible portfolio management reports include, for example:

- Application Charter (Figure 16)
- Application Map (Figure 17)
- Roles and Responsibilities in Applications (Figure 18)
- System Architecture Map (Figure 19)
- Snapshot (Figure 20)
- Quality Position (Figure 21)
- Visual Dependency Wheel (Figure 22)
- Life cycle costs by year of selected systems (Figure 23)
- Life cycle costs of selected systems (Figure 24)

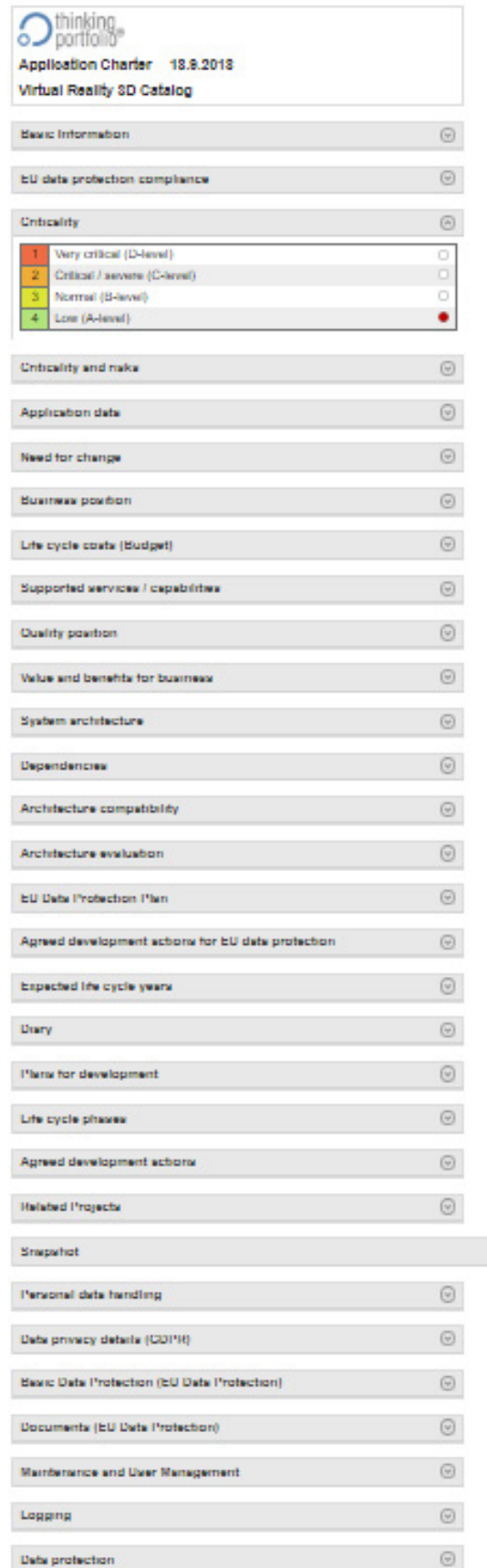


Figure 16. Application Charter

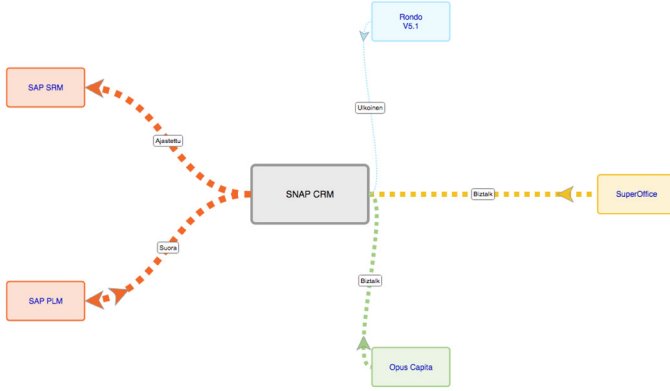


Figure 17. The application map shows the connecting systems and the connection attributes

Brennan Chrisann	
App. owner	SAP IM
ICT-owner	Robo-Warehouse Management
Chino Kobin	
App. owner	Robo-Warehouse Management
App. owner	Virtual Reality 3D Catalog
Fok Pim	
App. owner	Patient Dossier
Data Protection Officer	SAP IM
ICT-owner	Patient Dossier; Chipdossier
Jan, Barends	
ICT-owner	Patient Dossier
Kokki Vaino	
Service manager	Robo-Warehouse Management
Kooter Erik de	
App. owner	Patient Dossier; Chipdossier
Service manager	Patient Dossier
Lankela Kaarlo	
App. owner	Fleet Management
ICT-owner	Virtual Reality 3D Catalog
Palmu Frans	
Service manager	Fleet Management
Roos Aale	
Data Protection Officer	Patient Dossier
Service manager	Patient Dossier; Chipdossier
Skrof Kirsti	
ICT-owner	SAP IM
Service manager	Virtual Reality 3D Catalog
Tiainen Jasse	
Data Protection Officer	Patient Dossier; Chipdossier
Virta Toivo	
ICT-owner	Fleet Management
Service manager	SAP IM

Figure 18. Roles and responsibilities in applications

	Credit Acceptance	Perkins Fruits & Co	.CHG Healthcare
Estimate / Reposition			Mobility As a Service
Maintain Develop	Hansa		
Give up gradually Combine			
Renew Resolve otherwise		Direct Access Youconvertit	

Figure 19. System architecture map

Status	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Infra Service Level (SLA)	●	●	●	●	○	○	○	○	○	○	○	○
Costs	○	○	○	○	○	○	○	○	○	○	○	○
Overall	○	○	○	○	○	○	○	○	○	○	○	○

Figure 20. Snapshot

Quality	1	2	3	4
Functional quality	■	■	■	■
Technical quality	■	■	■	■
Knowledge quality	■	■	■	■
Information quality	■	■	■	■

Figure 21. Quality position

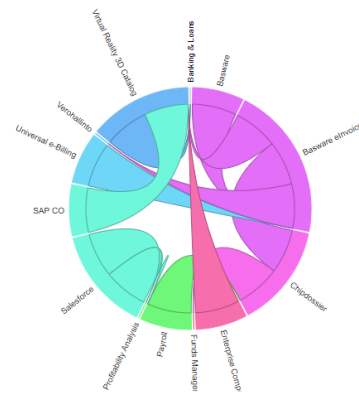


Figure 22. Visual dependency wheel

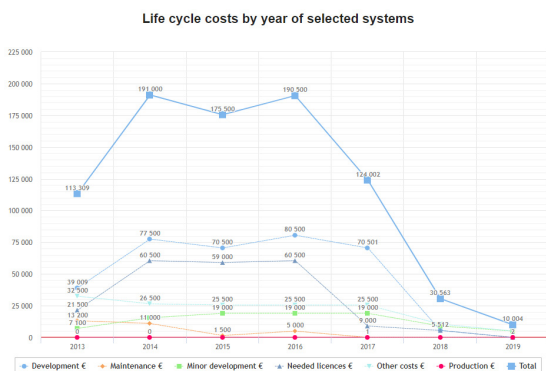


Figure 23. Life cycle costs by year of selected systems

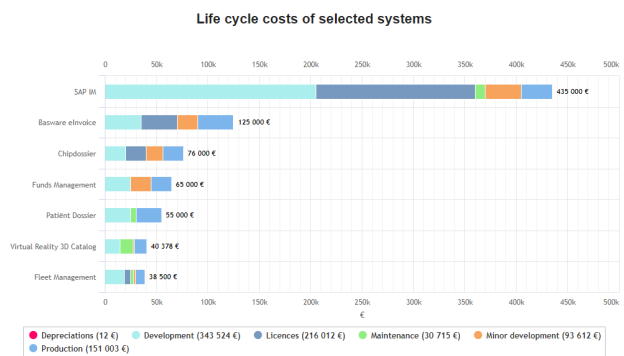


Figure 24. Life cycle costs of selected systems

More benefits from multiple portfolio related Landscape design in relation to EU data protection management

EU data protection requirements can be controlled from the application's point of view, but the Landscape model provides unquestionable additional benefits, for example through a project portfolio and a service portfolio. Portfolio Management enables limited and individual access rights and roles that provide verified control for processes.

- Application Portfolio data model can be connected to services to provide grounds for why personal data should be processed on the system. Application Portfolio can also be linked to Project Portfolio in order to evaluate the data protection requirements associated with the projects and their impact can be estimated in advance.
- Landscape model allows you to fully utilize the Thinking Portfolio portfolio structure for EU data protection:
- Utilization of the portfolio and project level
- If necessary, personal data can be processed at the project level if it is not presented at program level
- You can bring data security and privacy content to the theme pages of the Service Portfolio that only are available to the data protection officer or the inspector
- Utilizing the registry and application level in the Application Portfolio
- A registry entry created by multiple applications is created at the registry level in the Application Portfolio
- At an individual application level, the application's

relationship to data protection can be described, for example, collecting, processing, storing, and transferring, as well as information about responsibilities related to deleting the information

- Utilizing the service package and separate services in Services Portfolio
- The service package can consist of a number of separate services, e.g. social and health services, and under it, home nursing, elderly catering services, etc.

STATUS DATA PROTECTION SECURITY REQUIREMENTS

Virtual Reality 3D Catalog

Personal data handling

Does the system handle personal information?

Data privacy details (GDPR)

Does the application collect information from customers directly or send communications to customer?

Is the application the original source of personal data, the place where personal data is created for the first time?

Is the application strategic and strategically important for business?

Does the system handle sensitive personal information?

Documents (EU Data Protection)

Classification of data protection

Privacy statement

Basic Data Protection (EU Data P)

How is the data protected?

How is data usage and application activity n

System-controlled data

The internal owner of the information in the

Main user groups and user authorizations:

Internal organization that uses system data:

Thinking Portfolio Landscape means easy access, integration and common functionalities between different Thinking Portfolio portfolio solutions used in Company.

Privacy statement

On Data protection tab, there can be found smarform Privacy Statement. Privacy Statement describes the snapshot of the following data elements:

- Individual rights
- Use
- Storage, transfer and archiving of data
- Protection and management of information
- Given consents and privacy data life cycle management
- Other data protection requirements

Privacy Policy

On Lifecycle tab there can be found Privacy Statement report. The Privacy Statement can be saved into the Diary, and so have available a non-editable snapshot of a certain time.

Different access rights can be granted on service level and on level of individual service, if the controller wants to make role-based delimitations.

PRIVACY STATEMENT		
Virtual Reality 3D Catalog		18.9.2018
Rights of the data subject		
1	Status	Description
		The information provided by our customers can be submitted to another registrar in electronic form.
2		The application allows the data to be compiled and handed over to the customer in electronic form.
3		It is possible to delete the information at the request of the customer (deletion request).
4		Application functionality allows limiting the visibility of data (at customer request)
5		Data maintenance and deletion is possible without delays in the application.
Usage		
6	Status	Description
		Processing of customer data in an application for a new use is prevented if it requires the consent of the customer.

Figure 25. Privacy statement

Thinking Portfolio Application and Registry Portfolio and EU Data Protection

- A better corporate culture with portfolio management

Benefits of portfolio management from the point of view of EU data protection

Via portfolio management, it is easy to implement adequate practices for all levels of an organization. Portfolio management provides a systematic grasp and planning for personal data management and supports monitoring of implementation (data protection measurement). For example, for accountant Portfolio management is a concrete record of good data protection risk management, identification and preparedness. Principles of data protection, guidelines, and ongoing reporting are an integral part of portfolio management guidelines.

EU privacy and application portfolio

Below are introduced some elements possible to be included into the Thinking Portfolio Application portfolio via which the data volume required by EU data protection can be managed:

- The application portfolio defines a data protection officer responsible for ensuring the legality of the application's information security activities (acquisition, active development, maintenance, archiving, and decommission) throughout its lifecycle
- In the application portfolio, you can connect a group of applications to the same registry and so facilitate maintenance through one registry
- The application card may contain a summary of the application's EU privacy policy
- Application compliance can take into account EU data protection

Data Protection

The Data Protection tab describes application's personal data management, basic data protection, privacy enhancements, and links to smartforms such as Classification of Data Protection and Privacy Statement. Content of the portfolio can also be filtered based on the information in the field selection lists in Personal data handling and Data privacy details fields. For example, all applications that handle personal data can be filtered.

Classification of data protection

The Classification of data protection is implemented as a smartform that is selectable in the Data protection tab. The Smartform is a customized and user-friendly electronic form. It describes the internal dependencies of applications from a data protection perspective. In the example, this Virtual Reality 3D Catalog application uses information from the Salesforce application. The form would also describe possible external sources of information and if data is to be transferred to other internal applications. The Classification of data protection report is also stored in pdf format.

Figure 26. Data Protection tab

CLASSIFICATION OF DATA PROTECTION			
Virtual Reality 3D Catalog			
Classification and data type	Description of the purpose of the information. Why do we need information?	Who has entered information from the client to the app?	The application uses information from another internal (select application)
1 Category 1 Forenames	Contacting information	Jan, Barends	Salesforce
2			
Other data type:			

Figure 27. Data Protection tab

Customisation

Customisation

Thinking Portfolio is customized to meet the customer's portfolio needs, as well as portfolio management processes and concepts. The user interface can be in the Finnish, Swedish, English, or Dutch languages.

Conceptual independence and parameterization have been the starting points for the design of Thinking Portfolio's database structure. Customers can personally modify the tool facilitating the maintenance of the directory fields visible in different user interfaces.

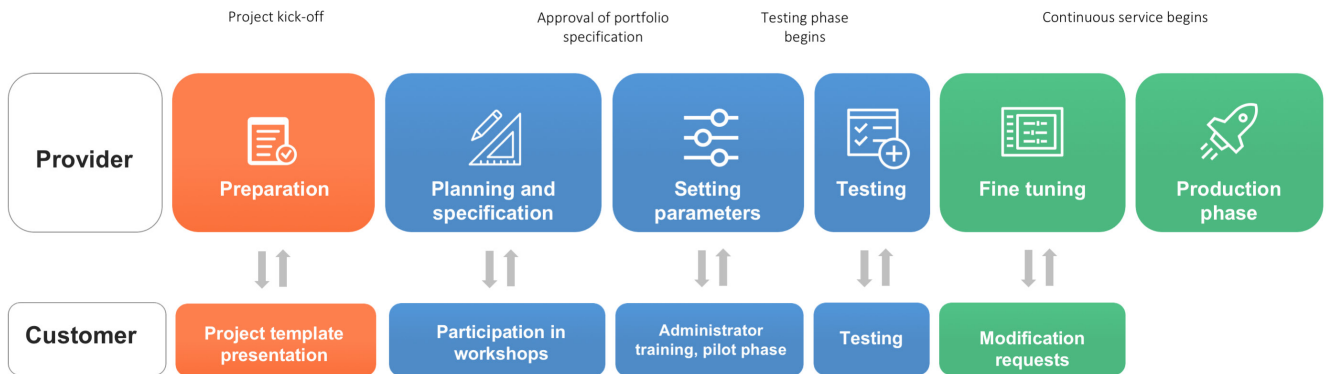
Different portfolio models

Thinking Portfolio's basic components – the widgets – facilitate the construction of various portfolio models. The widgets' content can be parameterized according to the concepts used by the customer.

The application's database solution has designed for maximum flexibility; customer-specific customization requires no structural modifications in the database.

Thanks to its structural solution, customizing the application customer-specifically for Proof of Concept use is rapid.

Implementation and Use



User interface

Thinking Portfolio is a completely browser-based application functioning with the latest versions of IE (11-), Edge, Chrome, Firefox, and Safari, as well as with iPad browsers.

User management

The specification of Thinking Portfolio's access control is role-based (Figure 25). With the Project Portfolio, the roles can be, for example, a member of the board of directors, a member of a steering group, project manager, and so forth. The role nomenclature is determined customer-specifically.

The portfolio application has one or several administrators who have extended rights, for example, the right to establish new projects. An administrator can be designated for the entire application, or for example, for the portfolio of a certain business area.

Project-specific work progress models describe each user's role and access to certain stages of a project. After logging into the system, the user can, depending on his or her designated project role, either browse, report, edit, or approve the results of a project stage.

User identification

The application supports two different access control methods: Windows identification, and internal user ID and password identification.

In Windows identification, the system's user name is the same as in the ActiveDirectory. Traditional user identification can be used, for example, when external Internet users are accessing the applications.

Connections to external systems – ThinkLink

Thinking Portfolio facilitates the construction of connections to external systems such as, SAP, M-Files, Kronodoc, Reptronic, Sharepoint, Aditro and Efecte.

The URL addresses written in the application's text area fields, for example, on documents, automatically change into hyperlinks.

PORTFOLIO									
USERS									
ORGANIZATIONS									
ROLES									
LIST VALUES									
HELP TEXTS									
ACCESS									
SNAPSHOTS									
TRASH									
TRANSLATIONS									
TESTS									
TEMPLATES									
Users									
Add user Export to Excel Show archived									
231/231									
esa.thinking	Thinking Esa	Thinking Portfolio Demo Area	esa.toivonen@thinkingportfolio	Full access	Full access	Yes			3:
jukka.thinking	Thinking Jukka	Thinking Portfolio	jukka.vahavahe@thinkingportfo	Full access	Full access				:
katri.thinking	Thinking Katri	XAMK Master School	katri.harju@thinkingportfolio.c	Full access	No rights				3:
kimmo.thinking	Thinking Kimmo	Thinking Portfolio Demo Area	kimmo.koponen@thinkingportfo	No rights	Read	Yes			3:
linus.thinking	Thinking Linus	Thinking Portfolio	linus.lindgard@thinkingportfoli	Full access	Full access				
marita.thinking	Thinking Marita	Thinking Portfolio	marita.marjomaa@thinkingport	Full access	Full access				
pauli.thinking	Thinking Pauli	Thinking Portfolio	pauli.sakkinen@thinkingportfol	Full access	Read				:
riku.thinking	Thinking Riku	Thinking Portfolio Demo Area	riku.anttila@thinkingportfolio.c	No rights	No rights	Yes			4:
esatoivo	Toivonen Esa	Omnia	esa.toivonen@thinkingportfolio	Full access	Full access	Yes			37:

Figure 25. User management view

Our Service Model

Thinking Portfolio provides a convenient hosting-solution in cooperation with Cygate Oy. Our cloud services all data is located in Finland. In that case customer does not have to install any application as a part of their IT environment, and the most up-to-date version of the application is always available.

Usage and maintenance are managed over secure connections. Limiting the use to certain IP addresses is also possible.

The service model includes telephone and e-mail support for the customer's administrative user.

Proof of Concept

We recommend the implementation of our fast Proof of Concept project (PoC) with the customer. After a few meetings, we will customer-specifically implement an application that be accessed from our server for a trial period of one month.

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 application portfolio

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