INTEROPERABILITY SOLUTIONS FOR EUROPEAN PUBLIC ADMINISTRATIONS MONITORING AND EVALUATION

D03.04/D03.05 Perceived Quality and Perceived Utility Monitoring Report

ISA Action 2.9 Document Repository Services for EU Policy Support

Framework Contract n° DI/07173-00

16 August 2016

DISCLAIMER

EXECUTIVE SUMMARY

The purpose of this section is to provide an overview of the key findings of the Perceived Quality and Perceived Utility of the **ISA Action 2.9 – Document Repository Services (DRS) for EU Policy Support.** The objective of the survey is to measure the action's Perceived Quality, which is defined as the extent to which the outputs of an ISA action are meeting its direct beneficiaries' expectations[1], and Perceived Utility, which is defined as the extent to which the effects (impact) of an ISA action correspond with the needs, problems and issues to be addressed by the ISA programme[2] and the action's specific objectives.

The survey was designed in the EUSurvey tool and distributed by e-mail to four contacts. Over the duration of two weeks[3], all of them have responded.

Table 1 and Table 2 give an overview of the main results of the survey. The detailed score calculation process is described in section 5.4.4.

TABLE 1 – ACTION 2.9 PERCEIVED QUALITY SURVEY MAIN RESULTS

	Score	Explanation of the score scale
Usefulness Score	7.00	Average value on a scale from 1 (Not useful at All) to 7 (Very Useful).
Value Score	4.63	Average value of all the statement means in the range from 1 (Disagree) to 5 (Agree).
User Satisfaction Score	88.69	User Satisfaction Score from 0 (none of the respondents are satisfied) to 100 (all respondents are satisfied with the work performed by the Action).
Net Promoter Score	50	Net Promoter Score from -100 (every customer is a Detractor) to 100 (every customer is a Promoter).
OVERALL PERCEIVED QUALITY SCORE	**4.56**	**The Overall Perceived Quality Score is the average value of the Usefulness Score, the Value Score, the User Satisfaction Score, and the Net Promoter Score reduced to a five point scale in range from (lowest score) to 5 (highest score).**

[1] DG BUDG (2004), "Evaluating EU activities, a practical guide for the Commission services"
[2] Papadomichelaki, X. and Mentzas, G. (2012), "e-GovQual: A multiple-item scale for assessing e-government service quality"
[3] The survey was launched on the 27th of February 2016 and was active until the 11th of March 2016.

TABLE 2 – ACTION 2.9 PERCEIVED UTILITY SURVEY MAIN RESULTS

	Score	Explanation of the score scale
Usefulness Score	7.00	Average value on a scale from 1 (Not useful at All) to 7 (Very Useful).
Value Score	4.41	Average value of all the statement means in the range from 1 (Disagree) to 5 (Agree).
User Satisfaction Score	87.33	User Satisfaction Score from 0 (none of the respondents are satisfied) to 100 (all respondents are satisfied with the work performed by the Action).
Net Promoter Score	50	Net Promoter Score from -100 (every customer is a Detractor) to 100 (every customer is a Promoter).
OVERALL PERCEIVED UTILITY SCORE	**4.48**	**The Overall Perceived Utility Score is the average value of the Usefulness Score, the Value Score, the User Satisfaction Score, and the Net Promoter Score reduced to a five point scale in range from 1 (lowest score) to 5 (highest score).**

It is important to take into account that the evaluation of the DRS was proposed to and done by only four respondents, due to the ongoing development of the DRS. The selection of the respondents might be biased. As a result, the findings of this survey are more like indicators of the Perceived Quality and Perceived Utility and they do not fully represent the opinions of all the users.

Main findings:

- The survey results demonstrate that the DRS of **Action 2.9 – Document Repository Services for EU Policy Support comply with both the ISA programme and the action's specific objectives**.
- The DRS is conformable to the Perceived Quality and the Perceived Utility dimensions (Support, Trust, Performance, Usability, Collaboration and Potential Re-usability).
- Respondents are very satisfied with the DRS and they would recommend it to colleagues or other Public Administrations (PAs).

Based on the users recommendations:

- Regarding improvements, according to the respondents, a batch process that loads the data from file could be added, as well as an array of key-values as business metadata in order to make it more generic and reusable.

REVISION HISTORY

Date	Version	Description	Authors	Approved by
22/06/2016	0.10	Initial version	CGI - Accenture	
24/06/2016	1.00	Final version	CGI - Accenture	
01/07/2016	2.00	Updated version	CGI – Accenture	
16/08/2016	3.00			Approved by HVA on 29/07/2016.

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1 INTRODUCTION

CGI-Accenture has been requested to deliver Perceived Quality and Perceived Utility Monitoring and Evaluation Reports as part of the execution of the ISA programme monitoring (Technical Annex for Specific Contract SC 193 under Framework contract n° DI/07173-00).

Based on the scope of the Specific Contract, the Perceived Quality is to be measured for 15 actions and the Perceived Utility is to be measured for 17 actions. This report covers the Perceived Quality and Perceived Utility measurement of the DRS of Action 2.9 –DRS for EU Policy Support.

This document is divided into the following sections:

- **Section 1:** provides an overview of the structure of the report;
- **Section 2:** provides an overview of the action and its objectives;
- **Section 3:** explains the methodology used to measure the Perceived Quality and Perceived Utility;
- **Section 4:** summarises the collected data;
- **Section 5:** focuses on the survey results and the data analysis:
    - The demographic profile of respondents;
    - Usage frequency of the action's outputs;
    - Usefulness Score;
    - Perceived Quality and Perceived Utility measurements;
    - Action strengths, weaknesses, opportunities and threats;
    - Statements based on action objectives;
    - Respondent recommendations and main benefits;
- **Section 6:** provides the survey conclusion and recommendations;
- **Section 7:** appendix includes:
    - Raw data export;
    - Glossary.

2 ACTION 2.9 – DOCUMENT REPOSITORY SERVICES FOR EU POLICY SUPPORT

EU Member States, the European Commission and other European Institutions create, exchange and store millions of business and legal documents each year.

Many of these documents are exchanged in full digital format, while for others there is a hybrid combination of digital and paper (scanning of paper inbound documents, or electronic storage of copies of outbound paper documents).

This project aims to set up common document management operations, particularly in cross-border IT systems used to support EU policies. It will do so by making DRS available to Member States' PAs, European Institutions and other organisations, based on best practices from the European Commission's central electronic document management system (HERMES) and its open source multilingual document exchange platform (CIRCABC).

HERMES, which has already more than 40 000 users, has been the model for the development of DRS. HERMES is compliant with European Commission rules in Document Management (e-Domec)

DRS is a reusable component with two dimensions: document repository structure and a series of services allowing the manipulation of documents in a secure way.

CIRCABC provides internal and external interest groups with a private web workspace to collaborate on common objectives and tasks, enabling the effective and secure sharing of resources and documents.

Action's objectives:

- Enable common document management operations, particularly in cross-border IT systems used to support EU policies;
- Provide generic document management components for EU policy support that can be used by Member States' PAs, European Institutions and other organisations.

Action's benefits:

- Streamlining document exchange and archiving processes;
- Economies of scale (infrastructure) and cost savings in development work;
- Compliance (common document management standards);
- More transparent document management procedures in European policy;
- Finding and sharing information more easily.

3 SURVEY METHODOLOGY

A common methodology was developed by the CGI-Accenture team for all the surveys included in the Perceived Quality and Perceived Utility Monitoring and Evaluation Reports. The common methodology enables a comparison between the different action results. The first section explains how the Perceived Quality is measured and which dimensions are covered. The second section explains how the Perceived Utility is measured and which dimensions are covered. The next section gives an overview of the main survey measurements. The last section describes the architecture of the survey.

3.1 PERCEIVED QUALITY

Perceived Quality is defined as the extent to which the outputs of an ISA action are meeting its direct beneficiaries' expectations[1]**.**

Four dimensions are used to measure the Perceived Quality criterion. These dimensions are derived from the main objectives of the ISA programme.

Perceived Quality for tools and services is measured using an adaption of the eGovQual scale model[4] which covers the following four dimensions:

- **Usability (Us)**: the ease of using or user friendliness of the tool/service and the quality of information it provides[4];
- **Trust (Privacy) (T)**: the degree to which the user believes the tool/service is safe from intrusion and protects personal information[4];
- **Performance (P)**: the feasibility and speed of accessing, using, and receiving services of the tool/service[4];
- **Support (S)**: the ability to get help when needed and the level of service received[4].

The survey statements for the dimensions listed above are directly adapted from the statements used in the eGovQual scale model.

3.2 PERCEIVED UTILITY

Perceived Utility is defined as the extent to which the effects (impact) of an ISA action correspond with the needs, problems and issues to be addressed by the ISA programme[5] and the actions' specific objectives.

[4] Papadomichelaki X., Mentzas G (2012), "e-GovQual. A multiple-item scale for assessing e-government service quality" http://imu.ntua.gr/sites/default/files/biblio/Papers/e-govqual-a-multiple-item-scale-for-assessing-e-government-service-quality.pdf
[5] Papadomichelaki, X. and Mentzas, G. (2012), "e-GovQual: A multiple-item scale for assessing e-government service quality"

Regarding the Perceived Utility measurement, several statements are derived from the objectives of the ISA programme. These statements are grouped into three dimensions which are defined as the criteria for measuring the Perceived Utility:

- **Potential Re-usability:** the degree to which the action's outcome(s) can be reused by PAs;
- **Sustainability:** to what extent is the financial, technical and operational sustainability of solutions ensured[6];
- **Collaboration:** the degree to which the action promotes/facilitates collaboration/cooperation between PAs[7].

The survey statements for the dimensions listed above were developed according to:

- The ISA programme's main objectives: "To support cooperation between European Public Administrations by facilitating the efficient and effective electronic cross-border and cross-sectorial interaction between such administrations, including bodies performing public functions on their behalf, enabling the delivery of electronic public services supporting the implementation of Community policies and activities[8] and actions' specific objectives." The Perceived Utility statements were tailored to reflect these objectives and were based on the ESOMAR[9] (World Association of Opinion and Marketing Research Professionals) standards.

The developed Perceived Utility dimension allows to perform a comparison between different actions and also will provide the opportunity to see if the ISA programme objectives have been met (from the user point of view).

3.3 SURVEY MEASUREMENTS

In the data analysis, the core types of measurements which are performed include the Value Score, the User Satisfaction Score, the Net Promoter Score and the Overall Score for Perceived Quality and Perceived Utility. The survey measurements are divided into two groups: action level measurement and Perceived Quality and Perceived Utility level measurements.

Action level measurements:

- The Usefulness Score indicates the respondents' evaluation of how useful the action is. The Usefulness Score is calculated taking into account a mean value from a single question: *"How useful overall is/would be the "Document Repository Services" to your information system?"*

[6] European Commission (2013), Interim evaluation of the ISA programme, "Report from the Commission to the European Parliament and Council COM (2013) 5 final".
[7] CRN (2015), Collaboration http://research.crn.com/technology/knowledge_management/collaboration
[8] Decision No 922/2009/EC of the European Parliament and of the Council of 16 September 2009 on interoperability solutions for European Public Administrations (ISA) (2009)
[9] ESOMAR, edited by Hamersveld. M., Bont C. (2007), Market Research, Handbook, 5th Edition

- Action strengths, weaknesses, opportunities and threats: statements are located in quadrants based on the calculated mean values of the dimensions' conformity and dimensions' importance. The quadrants highlight the weak and strong aspects of the action, as well as threats and opportunities.
- Statements based on action objectives show the respondents' evaluation to what extent the action's objectives have been achieved.

Perceived Quality and Perceived Utility level measurements:

- The Value Score shows the action's compliance to the dimensions defined above (see sections 3.1 and 3.2). Two aspects are considered for each dimension. On one side, the importance of the dimension for the users is assessed. On the other side we measure if the action is compliant with the dimension. This section includes statement mapping to dimensions, dimensions conformity results, criterion score and aggregation.
- The User Satisfaction Score shows how satisfied the respondents are with the action. The User Satisfaction Score is assessed with reference to the results of the dimensions' importance and dimensions' conformity evaluation. The User Satisfaction Score is measured at the individual level for each of the survey respondents via the identification of the important dimensions for that particular respondent.
- The Net Promoter Score® (NPS) is a widely used management tool that helps evaluate the loyalty of a customer relationship. In order to evaluate the NPS, the question *"how likely the respondent would recommend the particular action's output to others"* is asked.
- The Overall Score is used to get a single score that describes the overall Perceived Quality and Perceived Utility of the action. In order to determine the Overall Score, the average value of the Usefulness Score, the Value Score, the User Satisfaction Score and the Net Promoter Score is calculated. To calculate the Overall Score, all measurements are reduced to a five point scale.

3.4 Survey Architecture

The survey is divided into several sections which are outlined below:

- The demographic profile: for the purpose of identifying the respondents' demographic profile, respondents are asked to answer several questions. The demographic profile illustrates the diversity of the respondents who have participated in the survey.
- Usage of the action outputs: for the purpose of identifying the usage rate of the action outputs, the respondents are asked to answer a question regarding the usage of action output. This question also

works as filter, selecting the respondents who should evaluate the statements regarding the specific action output.

- The action's Usefulness: for the measurement of the action's usefulness, the respondents are asked to evaluate a single question using a 7-point Likert grading scale[10].
- The Perceived Quality and Perceived Utility Measurement: in order to measure the Perceived Quality and Perceived Utility, the respondents are asked to grade dimensions and statements based on their level of importance and agreement using a 5-point Likert grading scale[10]. Responses to these questions are used to determine the Value Score, action strengths, weaknesses, threats and opportunities, and the User Satisfaction Score.
- The Net Promoter Score: there is a single question that measures the Net Promoter Score. By answering this question, the respondents indicate their likelihood of recommending the action's outputs to colleagues or other PAs.
- Action strengths, weaknesses, opportunities and threats show the location of the action statements based on dimensions' conformity and importance results.
- Statements based on action objectives: in order to evaluate the extent to which these objectives conform to the action, the respondents are asked to grade statements based on their level of agreement using a 5-point Likert grading scale[10].
- The recommendations: the last section includes several open questions for recommendations and opinions regarding the action and the survey.

[10] A Likert Scale is a widely used scaling method developed by Rensis Likert. Likert scale refers to the use of an ordinal 4- or 5-point rating scale with each point anchored or labeled.

4 SURVEY DATA SUMMARY

This section aims to provide detailed information about the data gathering fieldwork. Table 3 gives an overview of the survey start and end dates, the number of respondents the survey was proposed to, the amount of responses collected, as well as the survey launching method.

TABLE 3 – ACTION 2.9 SURVEY TECHNICAL INFORMATION ABOUT THE FIELDWORK

Start date:	26/02/2016
End date:	11/03/2016
The survey launch method:	E-mail notification
Reminders:	E-mail reminder sent out on 7/03/2016
Target population:	4
Total number of respondents:	4
Number of suitable respondents for the survey:	4

5 Survey Results and Analysis

This section aims to provide the detailed survey analysis and to present the results.

5.1 Demographic Profile of Respondents

The respondents' demographic profiles describe the action respondents from the demographic point of view.

TABLE 4 – ACTION 2.9 DEMOGRAPHIC PROFILE OF RESPONDENTS

RESPONDENT PROFILE			
		Amount	Col %
ALL RESPONDENTS		4	100.0
GROUP	ECN Pilot users	4	100.0
POSITION LEVEL	Management level	2	50.0
	Technical level	2	50.0
LOCATION	Belgium	4	100.0
ORGANISATION	EU institutions	3	75.0
	Public administration at national level	1	25.0

Base: all respondents, n=4

5.2 USAGE OF THE ACTION

The usage profile provides an overview of the usage rate of the action. Table 5 shows how frequently the respondents use the DRS.

TABLE 5 – ACTION 2.9 USAGE OF DOCUMENT REPOSITORY SERVICES

USAGE PROFILE			
		Amount	Col %
ALL RESPONDENTS		4	100.0
FREQUENCY OF USAGE	Use it regularly	4	100.0

Base: all respondents, n=4

5.3 USEFULNESS SCORE

The Usefulness Score is calculated taking into account a single question: *"How useful overall is/would be the "Document Repository Services" to your information system?"*

The survey respondent is asked to provide his/her opinion using the 7-point Likert grading scale. For evaluation of the Usefulness, a grading scale is used with values ranging from "Very Useful" to "Not Useful at All". An additional "Hard to Say" option is provided, however this score is excluded from the score calculations. Before performing the survey data calculations, the 7-point Likert scale values are interpreted as numeric values:

- 7 – Very Useful;
- 6 – Useful;
- 5 – Rather Useful;
- 4 – Neither Useful nor Not Useful;
- 3 – Rather Not Useful;
- 2 – Not Useful;
- 1 – Not Useful at All;
- 0 – Hard to Say (*is not considered for the calculation).*

In Figure 1 the bar in red represents the positive answers. An explanatory legend with colour code represents the data which is available. The average mean value is presented on the right side of the figure.

FIGURE 1 – ACTION 2.9 USEFULNESS SCORE

The survey results show that all of the respondents evaluated the Usefulness of the DRS as 'Very useful'. The mean value is **7.00,** which is the highest possible score, meaning that the respondents have a very positive attitude about the Usefulness. However, the fact that the evaluation of the DRS was proposed to and done by only four respondents should be noted. The selection of the respondents might be biased. Therefore, the presented data should be reviewed with caution as it is more like indicators of the Perceived Quality and Perceived Utility.

5.4 PERCEIVED QUALITY AND PERCEIVED UTILITY MEASUREMENTS

This section aims to provide a detailed Perceived Quality and Perceived Utility measurement analysis and to present the results.

5.4.1 Value Score

This section includes the analysis and results of Perceived Quality and Perceived Utility Value Scores. It is structured into two main sections: the dimensions' importance and dimensions' conformity via statements.

5.4.1.1 DIMENSIONS IMPORTANCE

Prior to the evaluation of the dimensions' conformity to the outputs of the action, it is essential to initially ascertain whether these dimensions are important to the respondents while working with the action. If a specific dimension is important to the respondents, then it is essential that its conformity assessment is positive. However, if a dimension is not important to the respondents, then it should not be considered as the action's weakness because of non-compliance with the outputs of the action.

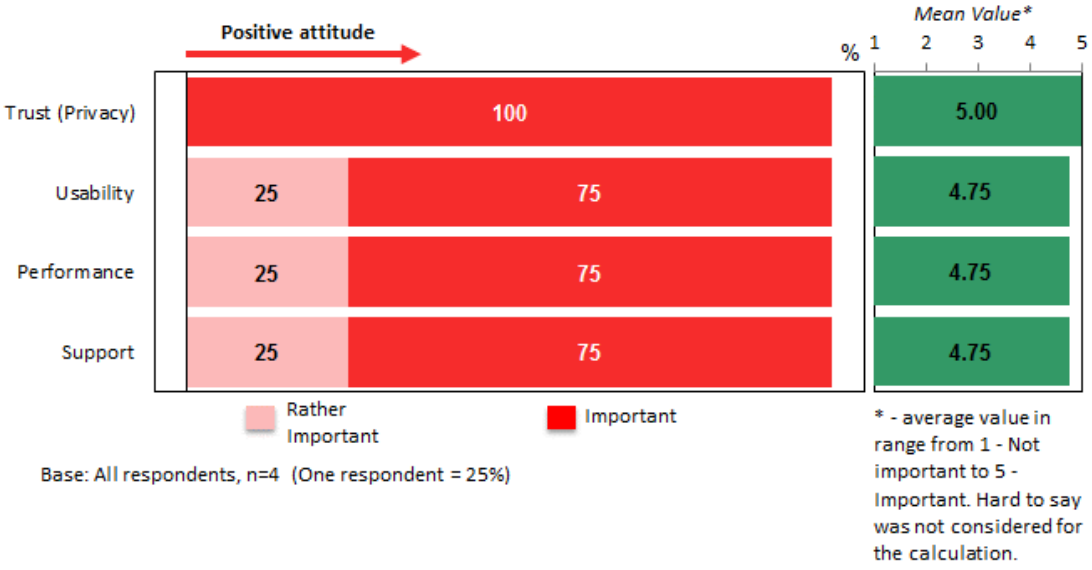
Four Perceived Quality dimensions (Trust (Privacy), Usability, Performance and Support) and two Perceived Utility dimensions (Collaboration and Potential Re-usability) are evaluated in the survey. This section describes the respondents' answers regarding the importance of the dimensions.

Each respondent is requested to provide his/her opinion using the 5-point Likert grading scale. For the dimensions' importance evaluation, a grading scale with values ranging from 'Important' to 'Not important' is used. An additional 'Hard to Say/Not Applicable' option is provided, however this choice is excluded from the score calculations. Before performing the survey data calculations, the 5-point Likert scale values are interpreted as numeric values:

- 5 – Important;
- 4 – Rather Important;
- 3 – Neither Important nor Unimportant;
- 2 – Rather not Important;
- 1 – Not Important;
- 0 – Hard to Say/Not Applicable *(is not considered for the calculation).*

In Figure 2 the bars in pink/red represent the positive attitude (answers 'Rather important' and 'Important'). An explanatory legend with colour codes represents the available data. The average mean value for each of the dimensions is presented on the right side of the figure.

FIGURE 2 – ACTION 2.9 PERCEIVED QUALITY DIMENSIONS IMPORTANCE RESULTS



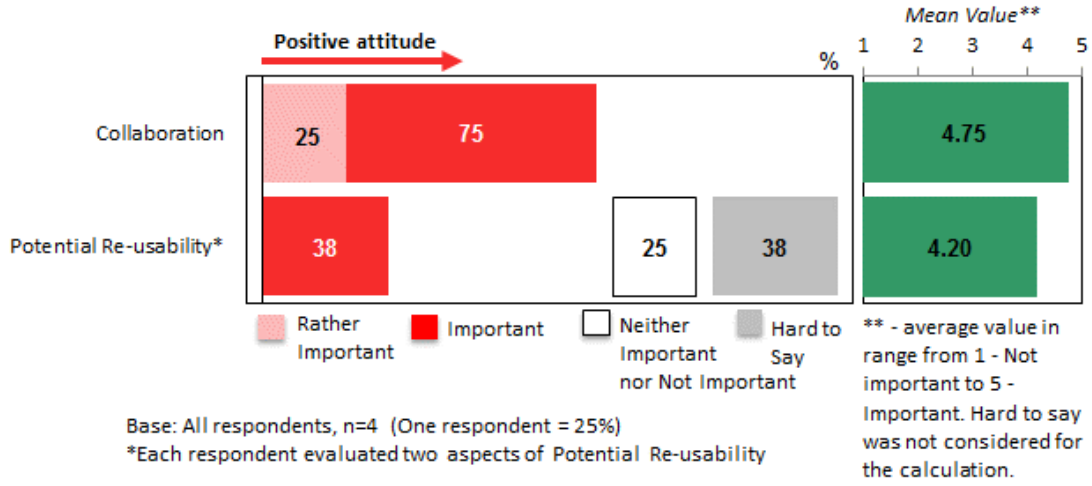
Base: All respondents, n=4 (One respondent = 25%)

"How important to you are/would be these factors when using "Document Repository Services", taking into consideration the project as a whole with all its outputs – the document repository structure, the services allowing the secured manipulation of documents?"

The survey results indicate that all of the dimensions are highly important to the respondents of this survey. The Trust (Privacy) dimension was evaluated as 'Important' by all four respondents with a mean value of **5.00**. Three out of four respondents evaluated the Usability, the Performance and the Support dimension as 'Important', while one respondent evaluated each dimension as 'Rather Important', therefore the mean value for these dimensions is **4.75**.

FIGURE 3 – ACTION 2.9 PERCEIVED UTILITY DIMENSIONS IMPORTANCE RESULTS

"How important to you are/would be these factors when using "Document Repository Services", taking into consideration the project as a whole with all its outputs – the document repository structure, the services



Base: All respondents, n=4 (One respondent = 25%)
*Each respondent evaluated two aspects of Potential Re-usability

allowing the secured manipulation of documents?"

The survey results indicate that the respondents evaluated Collaboration as more important to them than the Potential Re-usability of the DRS. The mean value of the Collaboration dimension **is 4.75**, while the mean value of the Potential Re-usability dimension is **4.20**.

5.4.1.2 DIMENSIONS CONFORMITY

In order to measure the Perceived Quality dimensions' conformity to the action, a set of descriptive statements was developed for each dimension. By evaluating the statement conformity to the action, the extent to which the dimensions correspond to the ISA programme's objectives is measured.

This section provides an analysis of the statements. It starts with statement mapping to dimensions, which is followed by the analysis of the Perceived Quality and Perceived Utility dimension conformity statements. Finally, the last section provides an overview of the statement conformity scores, which are summarised in groups according to the dimensions.

5.4.1.2.1 STATEMENT MAPPING TO DIMENSIONS

In total, Action 2.9 has nine Perceived Quality and eight Perceived Utility statements regarding the dimensions' conformity. Table 6 gives an overview of the statements representing each dimension. The Potential Re-usability dimension is represented by five statements, the Support and the Collaboration dimensions are represented by three statements each, while the Usability, the Trust (Privacy) and the Performance dimensions are represented by two statements each.

TABLE 6 – ACTION 2.9 STATEMENT MAPPING TO DIMENSIONS

	Perceived Quality Statements	Dimension
1	The structure of the "Document Repository Services" is clear and easy to follow	Usability
2	The "Document Repository Services" are well customized to individual users' needs	Usability
3	Data provided by users in the "Document Repository Services" are archived securely	Trust (Privacy)
4	Data provided in the "Document Repository Services" are used only for the reason submitted	Trust (Privacy)
5	The "Document Repository Services" are available and accessible whenever it is needed	Performance
6	The "Document Repository Services" perform the service successfully upon the first request	Performance
7	The support team showed a sincere interest in solving users' problems	Support
8	The support team provided prompt replies to the users' inquiries	Support
9	The support team has the knowledge to answer users' questions	Support
	Perceived Utility Statements	**Dimension**
1	Overall, the "Document Repository Services'" activities help save costs	Potential Re-usability
2	Overall, the "Document Repository Services'" activities help save time	Potential Re-usability
3	The "Document Repository Services" are planned to be used in future by you	Potential Re-usability
4	The "Document Repository Services" provide sustainable solutions that will also be relevant in future	Potential Re-usability
5	Overall, the "Document Repository Services" support effective reuse of others tools/services/documentation	Potential Re-usability
6	The "Document Repository Services" help successfully cooperate with other public administrations/departments	Collaboration
7	Overall, the "Document Repository Services" support effective electronic cross-border and cross-sector interaction	Collaboration
8	The "Document Repository Services" support the implementation of European community policies and activities	Collaboration

5.4.1.2.2 DIMENSIONS CONFORMITY RESULTS

For the purpose of describing dimensions' conformity to the action, nine Perceived Quality and eight Perceived Utility statements were designed for this survey. The respondents are asked to evaluate the extent to which these statements conform to this particular action.

Each respondent is requested to provide his/her opinion using the 5-point Likert grading scale. For the dimensions' conformity evaluation, a grading scale with values ranging from 'Agree' to 'Disagree' is applied. An additional 'Hard to Say/Not Applicable' option is provided, however this score is excluded from the score calculations. Before performing the survey data calculations, the 5-point Likert scale values are interpreted as numeric values:

- 5 – Agree;

- 4 – Rather Agree;
- 3 – Neither Agree nor Disagree;
- 2 – Rather Disagree;
- 1 – Disagree;
- 0 – Hard to Say/Not Applicable *(is not considered for the calculation).*

The bars in pink/red represent the positive attitude (answers 'Agree' and 'Rather Agree') of the respondents. None of the respondents provided negative responses. In addition, a neutral opinion (the bars in white) and a 'Hard to Say' option (the bars in grey) are presented separately on the right. An explanatory legend with colour codes represents the available data. The average mean value for each of the dimensions is presented on the right side of the figure.

FIGURE 4 – ACTION 2.9 PERCEIVED QUALITY DIMENSIONS CONFORMITY RESULTS

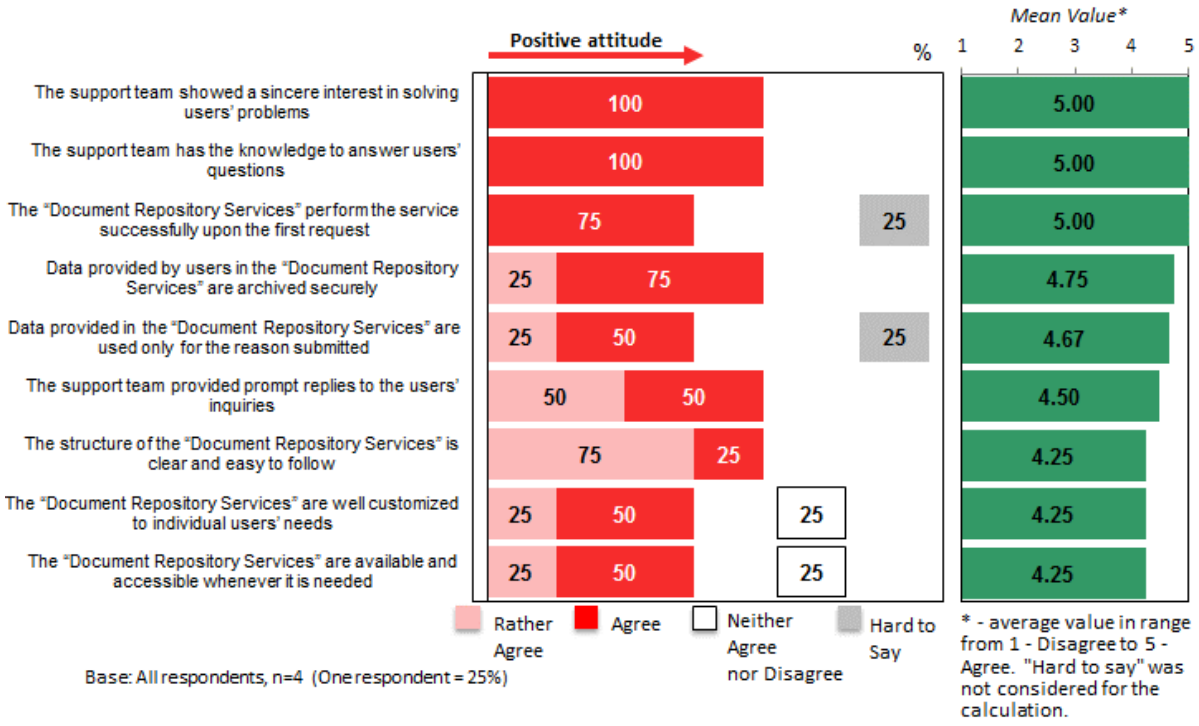


Figure 4 shows that all of the Perceived Quality statements regarding the DRS have been evaluated as conformable, as the mean values are higher than the value 4 – 'Rather Agree'. Also, none of the respondents had a negative attitude towards any of the Perceived Quality statements.

FIGURE 5 – ACTION 2.9 PERCEIVED UTILITY DIMENSIONS CONFORMITY RESULTS

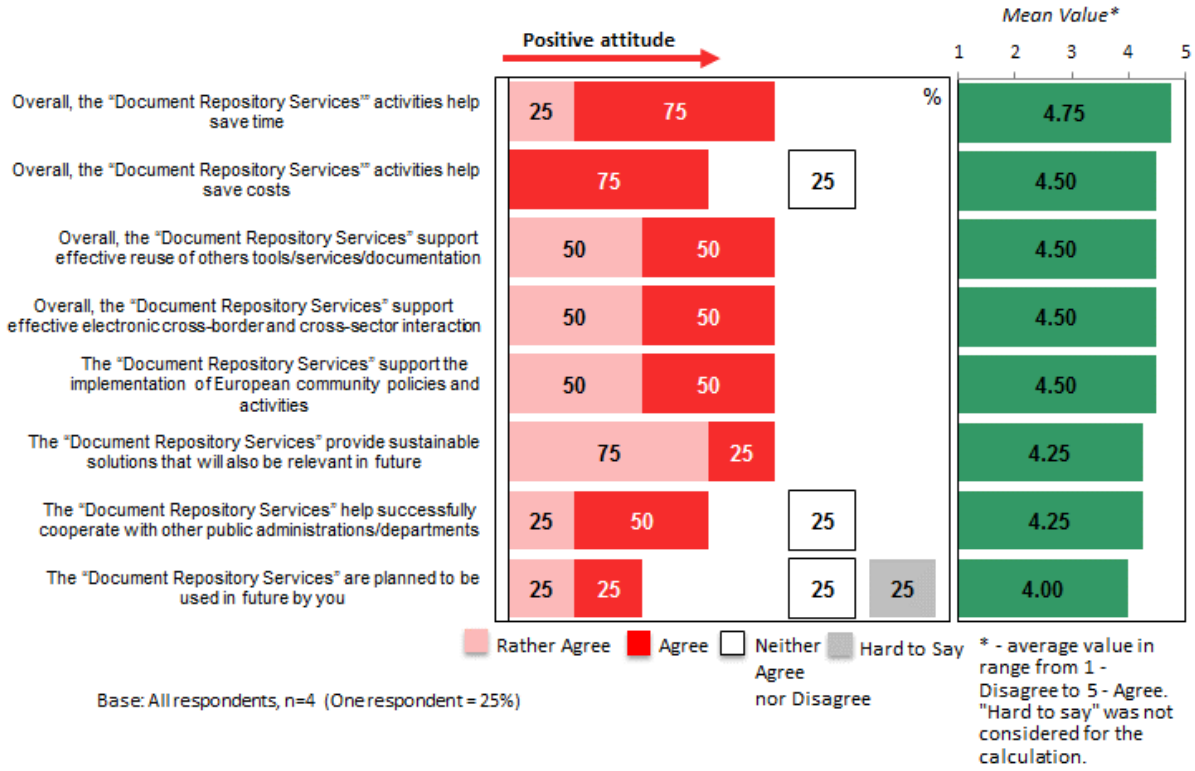


Figure 5 shows that all of the Perceived Utility statements regarding the DRS have been evaluated as conformable, as the mean values are equal or higher than the value 4 – 'Rather Agree'. The only statement which was evaluated with a mean value **4.00** indicates that only one respondent is fully certain on using the DRS in future.

Table 7 and Table 8 provide an overview of the statements' conformity scores, which are summarised per dimension. To calculate these scores, the average values of all the relevant dimension statements are taken into account. The additional statistical calculations[11] - mode, standard deviation and standard error are not performed due to the low number of respondents. With reference to the theory used in business research methods,[12] it is concluded that for statistically meaningful calculations, the minimum respondent number should be equal to or greater than ten per statement, thus they are not calculated for the Perceived Quality and Perceived Utility statements.

[11] Dictionary of statistics & methodology: a nontechnical guide for the social sciences (page 226).
[12] Cooper D. R., Schindler P. S. (2013), Business Research Methods, 12th Edition

TABLE 7 – ACTION 2.9 AVERAGE RATING PER PERCEIVED QUALITY DIMENSION

	Dimension	MEAN
Per dimension	Support	4.84
	Trust (Privacy)	4.72
	Performance	4.58
	Usability	4.25
Total Criterion Score		**4.60**

The survey results show that, regarding the DRS, respondents evaluated all of the Perceived Quality dimensions (Support, Trust (Privacy) Performance and Usability) as conformable, the mean values for these dimensions are higher than **4**. However, the fact that the evaluation of the DRS was proposed to and done by only four respondents should be noted, meaning that the data should be reviewed with caution, as the difference between the mean values of each dimension is highly influenced by every respondent.

TABLE 8 – ACTION 2.9 AVERAGE RATING PER PERCEIVED UTILITY DIMENSION

	Dimension	MEAN
Per dimension	Collaboration	4.43
	Potential Re-Usability	4.42
Total Criterion Score		**4.43**

The survey results show that, regarding the DRS, respondents evaluated both of the Perceived Utility dimensions (Collaboration and Potential Re-usability) as conformable, the mean values for these dimensions are higher than 4. However, as stated previously about the Perceived Quality dimensions, the data should be reviewed with caution.

5.4.1.2.3 PERCEIVED QUALITY CRITERION SCORE AGGREGATION

Figure 6 provides a visual overview of the dimensions' conformity scores.

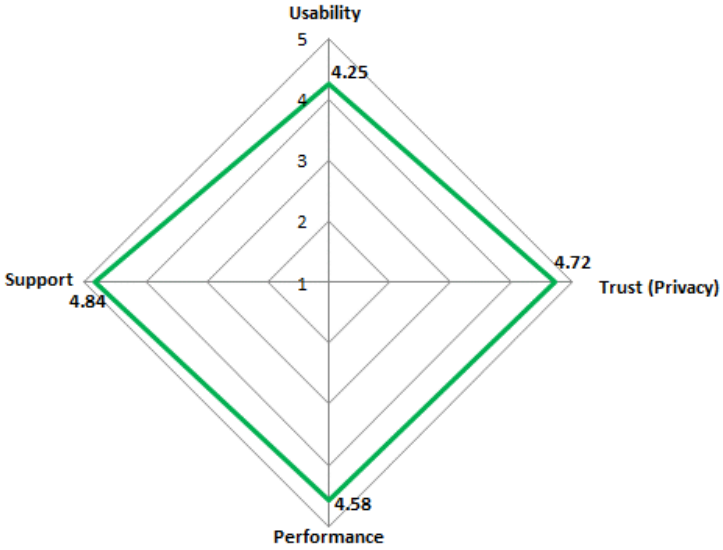


FIGURE 6 – ACTION 2.9 PERCEIVED QUALITY CRITERION SCORE AGGREGATION

5.4.2 User Satisfaction Score

The User Satisfaction Score shows how satisfied and happy the respondents are with the performance of a specific action. The User Satisfaction Score is expressed as a percentage from 0 to 100, where 0 signifies that there are no satisfied and happy respondents, whereas 100 signifies all respondents are satisfied and happy with the work performed by the action.

The User Satisfaction Score is assessed with reference to the results of the dimensions' importance and dimensions' conformity evaluation. The User Satisfaction Score is measured at the individual level for each of the survey respondents via identification of the important dimensions for that particular respondent.

To increase the accuracy of the calculation, a specific weight coefficient is applied to the dimensions. To those dimensions which were evaluated as "Important" a weight coefficient of 1 was applied, while a coefficient of 0.5 was applied to the dimensions which were evaluated as "Rather Important". A coefficient of 0 is applied to all the other dimensions. Finally, all the individual values are summed.

As the next step, an analysis of the statements which represent these identified dimensions is performed. If a respondent claimed that a particular statement fully corresponded to the specific dimension (value 5 – 'Agree'), then a coefficient of 100 (100% eligibility) is assigned. If evaluated with 4 – 'Rather Agree', a coefficient of 75 applies, if evaluated with 3 – 'Neither Agree nor Disagree', a coefficient of 50 applies, if

evaluated with 2 – 'Rather Disagree', a coefficient of 25 applies, and in the case it was evaluated with 1 – 'Disagree', the coefficient is 0.

FIGURE 7 – ACTION 2.9 PERCEIVED QUALITY USER SATISFACTION SCORE

Figure 7 shows that the **Perceived Quality User Satisfaction Score is 89.69**. The result indicates a high level of respondent satisfaction with the DRS. However, this value is only indicative as it only represents the opinions of four respondents.

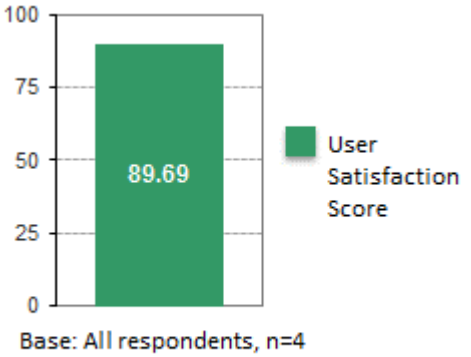
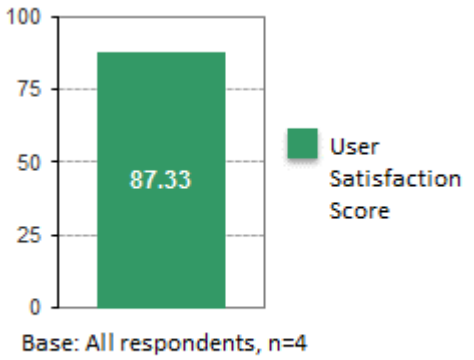


FIGURE 8 – ACTION 2.9 PERCEIVED UTILITY USER SATISFACTION SCORE

Figure 8 shows that the **Perceived Utility User Satisfaction Score is 87.33**. The result indicates a high level of respondent satisfaction with the DRS. However, this value is only indicative as it only represents the opinions of four respondents.



5.4.3 Net Promoter Score

The Net Promoter Score® (NPS) is a widely used management tool that helps evaluate the loyalty of a customer relationship[13]. This management tool has been adapted to suit the ISA programmes' Evaluation and Monitoring activities and measures the overall respondents'/stakeholders' experience and loyalty to a specific ISA action.

In order to evaluate the NPS, the question "how likely the respondent would recommend the particular action's output to others" is asked. The assessment is done on a scale from 0 to 10, where 0 represents the answer "Not likely at all" and 10 – "Extremely likely"[14]. After the data analysis, the respondents are classified as follows:

[13] Official webpage of Net Promoter Score ® community http://www.netpromoter.com/home.
[14] Markey, R. and Reichheld, F. (2011), "The Ultimate Question 2.0: How Net Promoter Companies Thrive in a Customer-Driven World"

- **Promoters** (numeric values from 9 - 10) - loyal users who will keep using the action's final outcome and refer others, promoting the usage of the action's outcomes;
- **Passives** (numeric values from 7 - 8) - satisfied but unenthusiastic users who will most probably not recommend the action's outcomes to others;
- **Detractors** (numeric values from 0 - 6) - unhappy users who can damage the image and decrease the usage of the action's outcomes.

The NPS final score calculation is done based on the following formula:

NPS = % of Promoters - % of Detractors[14]

The result can range from a low of -100 (every customer is a Detractor) to a high of +100 (every customer is a Promoter).

FIGURE 9 – ACTION 2.9 PERCEIVED QUALITY NET PROMOTER SCORE

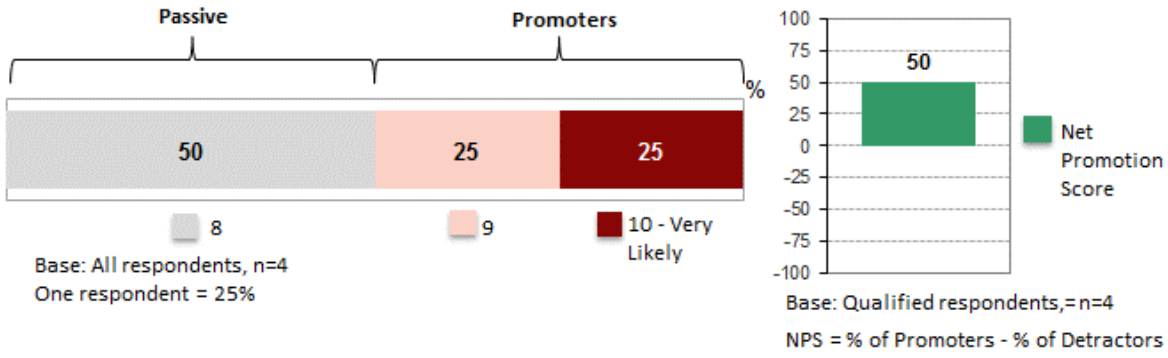


Figure 9 shows that, based on the Net Promoter Score classification, two out of four respondents are Promoters of the DRS and would recommend them to colleagues or other PAs. The other two respondents are Passive Users who are satisfied but unenthusiastic users who will most probably not recommend the action's outcomes to others. The Net Promoter Score is 50, yet it is based only on four respondents.

FIGURE 10 – ACTION 2.9 PERCEIVED UTILITY NET PROMOTER SCORE

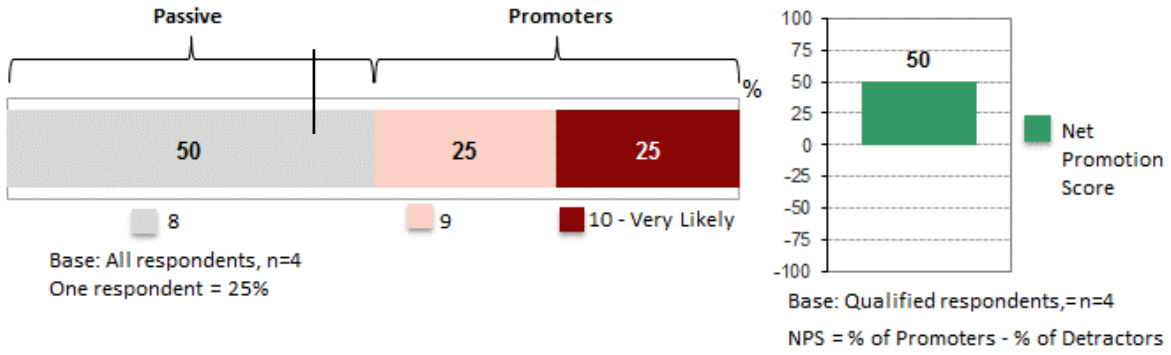


Figure 10 shows that based on the Net Promoter Score classification two out of the four respondents are Promoters of the DRS and would recommend it to colleagues or other PAs. The other two respondents are Passive Users who are satisfied but unenthusiastic users who will most probably not recommend the action's outcomes to others. The Net Promoter Score is 50, yet it is based on only four respondents.

5.4.4 Overall Score

Referring to the performed measurements described earlier, namely the Usefulness Score, the Value Score, the Usefulness Score and the NPS, an Overall Perceived Quality Score and Overall Perceived Quality and Perceived Utility Score is calculated.

To calculate the Overall Perceived Quality and Perceived Utility Scores, all measurements are reduced to a five point scale (the statements used to calculate the Value Score are already expressed using a scale from 1 to 5, the Usefulness Score had values from 1 to 7, NPS - from -100 to +100, and the User Satisfaction Score - from 0 to 100). In order to determine the Overall Perceived Quality and Perceived Utility Scores, the average value of these four measurements is calculated. To reduce any linear scale to a different linear scale the following formula[15] is used:

$$Y = (B - A) * (x - a) / (b - a) + A$$

- Y = Value after reducing to a five point scale
- x = Value in the initial scale
- B = The highest value of the new scale (in this case it is 5, as we are reducing other scales to a five point scale)

[15] *Transforming different Likert scales to a common scale*. IBM. Retrieved February 04. 2016., from http://www-01.ibm.com/support/docview.wss?uid=swg21482329

- A = The lowest value of the new scale (in this case it is 1, as we are reducing other scales to a five point scale)
- b = The highest value of the original scale (for Net Promoter Score and User Satisfaction Score it is + 100, for Usefulness Score it is 7)
- a = The lowest value of the original scale (for the Net Promoter Score it is 100, for the User Satisfaction Score it is 0 and for the Usefulness Score it is 1)

Example of reducing Net Promoter Score to a five point scale:

*(5-1) * ((50) - (-100)) / (100 - (-100)) + 1 = 4 * 150/ 200 + 1 = 600 / 200 + 1 = 3.00 + 1 = 4.00*

TABLE 9 – ACTION 2.9 OVERALL PERCEIVED QUALITY SCORE CALCULATION

NAME OF THE SCORE	ORIGINAL VALUE	VALUE AFTER REDUCING TO A FIVE POINT SCALE
Usefulness Score	7.00	5.00
Value Score	4.63	4.63
User Satisfaction Score	89.69	4.59
Net Promoter Score	50	4.00
OVERALL PERCEIVED QUALITY SCORE		**4.56**

The survey results show that on a 5-point scale all of the results have a very high evaluation. The Usefulness Score has the highest evaluation – 5. The only score which is relatively low compared to the others is the Net Promoter Score, however, since only four respondents participated in the evaluation of the DRS, the influence of each respondent on the results is very high.

TABLE 10 – ACTION 2.9 OVERALL PERCEIVED UTILITY SCORE CALCULATION

NAME OF THE SCORE	ORIGINAL VALUE	VALUE AFTER REDUCING TO A FIVE POINT SCALE
Usefulness Score	7.00	5.00
Value Score	4.41	4.41
User Satisfaction Score	87.33	4.49
Net Promoter Score	50	4.00
OVERALL PERCEIVED UTILITY SCORE		**4.48**

The survey results show that on a 5-point scale all of the results have a very high evaluation. The Usefulness Score has the highest evaluation – 5. The only score which is relatively low compared to the others is the Net Promoter Score, however, since only four respondents participated in the evaluation of the DRS, the influence of each respondent on the results is very high.

5.5 ACTION STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS

When analysing the data results of the dimensions' conformity versus the dimensions' importance, the action's strengths, weaknesses, opportunities and threats can be identified.

Statements are located in quadrants, based on the dimensions' conformity statements and dimensions' importance calculated mean values. The quadrants highlight the weak and strong aspects of the action, as well as threats and opportunities.

In general, all the statements that are attributed to the action can be grouped into four categories:

- Strengths – Essential to respondents and relevant to the action (1st quadrant);
- Weaknesses – Essential to respondents but not relevant to the action (2nd quadrant);
- Threats – Not essential to respondents and not relevant to the action (3rd quadrant);
- Opportunities – Not essential to respondents but relevant to the action (4th quadrant).

Four colours are used to identify Perceived Quality dimensions in Figure 11:

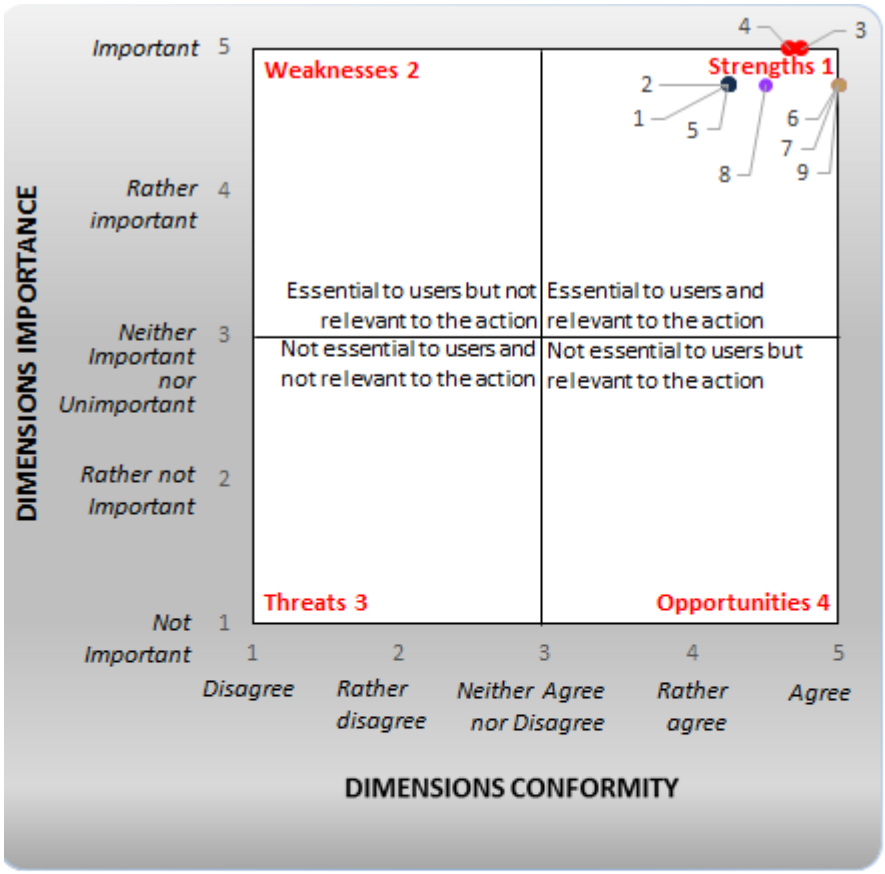
- Dark blue: Usability;
- Red: Trust (Privacy);
- Brown: Performance;
- Purple: Support;

Two colours are used to identify Perceived Utility dimensions in Figure 12:

- Dark blue: Potential Re-usability;
- Red: Collaboration.

As seen in Figure 11, all nine Perceived Quality statements are evaluated as essential to the respondents and relevant to the action - all of them are located in the 1st quadrant and are identified as strengths of DRS.

FIGURE 11 – ACTION 2.9 PERCEIVED QUALITY ACTION STRENGTHS, WEAKNESSES, OPPORTUNITES AND THREATS



I. Usability:

1 - The structure of the "Document Repository Services" is clear and easy to

2 - The "Document Repository Services" are well customized to individual users' needs

II. Trust (Privacy):

3 - Data provided by users in the "Document Repository Services" are archived securely

4 - Data provided in the "Document Repository Services" are used only for the reason submitted

III. Performance:

5 - The "Document Repository Services" are available and accessible whenever it is needed

6 - The "Document Repository Services" perform the service successfully upon the first request

IV. Support:

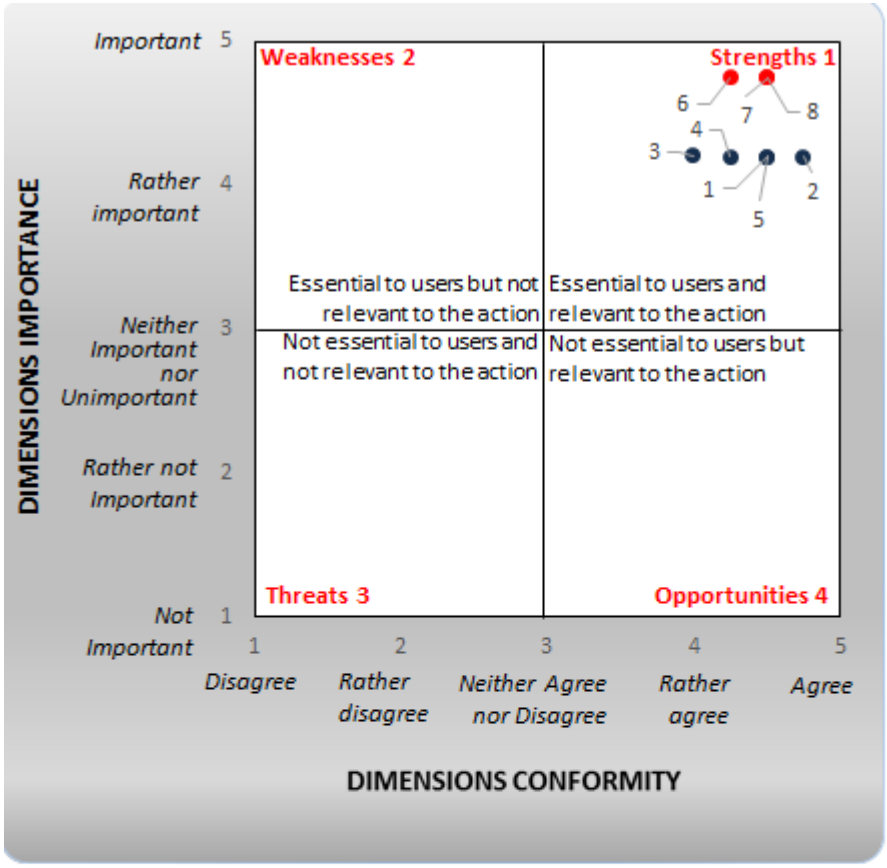
7 - The support team showed a sincere interest in solving users' problems

8 - The support team provided prompt replies to the users' inquiries

9 - The support team has the knowledge to answer users' questions

As seen in Figure 12, all eight Perceived Utility statements are evaluated as essential to the respondents and relevant to the action - all of them are located in the 1st quadrant and are identified as strengths of the DRS.

FIGURE 12 – ACTION 2.9 PERCEIVED UTILITY ACTION STRENGTHS, WEAKNESSES, OPPORTUNITES AND THREATS



I. Potential Re-usability

1 - Overall, the "Document Repository Services'" activities help save costs

2 - Overall, the "Document Repository Services'" activities help save time

3 - The "Document Repository Services" are planned to be used in future by you

4 - The "Document Repository Services" provide sustainable solutions that will also be relevant in future

5 - Overall, the "Document Repository Services" support effective reuse of others tools/services/documentation

II. Collaboration

6 - The "Document Repository Services" help successfully cooperate with other public administrations/departments

7 - Overall, the "Document Repository Services" support effective electronic cross-border and cross-sector interaction

8 - The "Document Repository Services" support the implementation of European community policies and activities

5.6 STATEMENTS BASED ON ACTION OBJECTIVES

For the purpose of describing the action's objectives, statements based on action objectives were designed for this survey. The respondents are asked to evaluate the extent to which these statements conform to the particular action, namely, if the action's objectives have been achieved.

The respondent is asked to provide his/her opinion using the 5-point Likert grading scale. For the dimension conformity evaluation, a grading scale with values ranging from 'Agree' to 'Disagree' is applied. An additional 'Hard to Say/Not Applicable' option is provided, however this score is excluded from the score calculations. Before performing the survey data calculations, the 5-point Likert scale values are interpreted as numeric values:

- 5 – Agree;
- 4 – Rather Agree;
- 3 – Neither Agree nor Disagree;
- 2 – Rather Disagree;
- 1 – Disagree;
- 0 – Hard to Say/Not Applicable *(is not considered for the calculation).*

In Figure 13 the bars in pink/red represent the positive attitude (answers 'Agree' and 'Rather Agree'). An explanatory legend with colour codes represents the available data. The average mean value for each of the dimensions is presented on the right side of the figure.

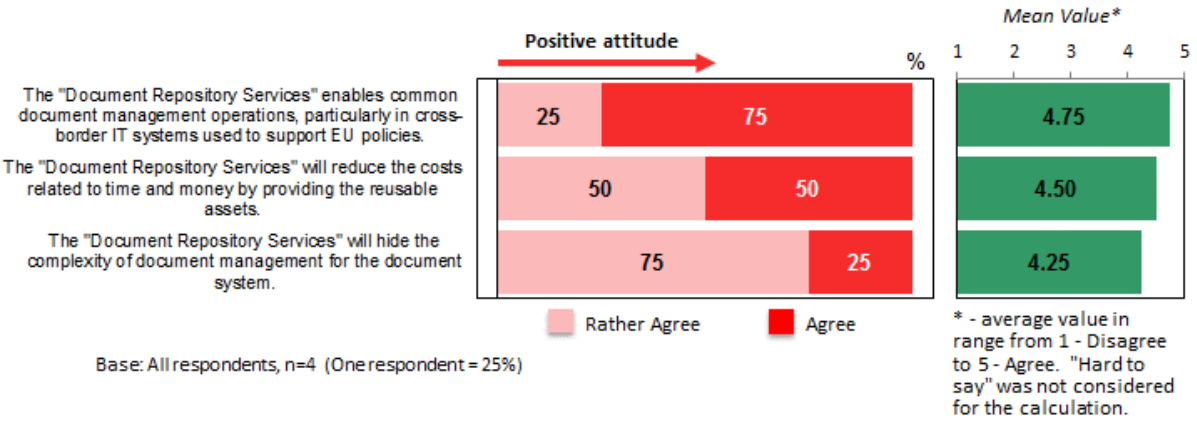


FIGURE 13 – ACTION 2.9 STATEMENTS BASED ON ACTION OBJECTIVES

The survey results demonstrate that the respondents evaluated the statements based on action objectives as relevant to the DRS. None of the respondents had a negative attitude towards them. The mean values are

higher than the value 4 – 'Rather Agree'. However, as stated previously, due to the fact that the evaluation was done only by four respondents, the results should be reviewed with caution.

5.7 Respondent Recommendations and Opinions

This section provides an overview of the feedback received on the DRS. It should be noted that each response is given by a single survey respondent, which means that the number of different answers to each question is the same as the number of respondents who had an opinion or a recommendation to the specific question.

TABLE 11 – ACTION 2.9 RECOMMENDATIONS AND BENEFITS

"Do you have any recommendations to improve the "Document Repository Services", taking into consideration the project as a whole with all its outputs - the document repository structure, the services allowing the secured manipulation of documents?"
Elements related to scalability with regards to the number of systems using the services should already be taken into account
Probably for the initial load of information it would be very useful to have a batch process that loads the data from a file.
The specific business metadata is very strict. I think it could be very useful to have an array of key-value as business metadata in order to make it more generic and reusable.
"What are the main benefits or the most valuable things about the "Document Repository Services" and its outputs – the document repository structure, the services allowing the secured manipulation of documents?"
the main benefit is the possibility to "outsource" most of the document management logic to a dedicated service
The client is really useful for making the development almost transparent. And the integration with ECAS (for end-users and script users) it was something really easy to do.
"Do you have any other recommendations to share with us?"
To reduce the traffic for the metadata included in the web services, maybe it could be interesting to implement a RESTful version of the client.

6 SURVEY CONCLUSION AND RECOMMENDATIONS

The objective of the survey was to evaluate the Perceived Quality and the Perceived Utility for the **ISA Action 2.9 – Document Repository Services for EU Policy Support.** It is important to take into account that the evaluation of the DRS was proposed to and done by only four respondents, due to the ongoing development of the DRS. The selection of the respondents might be biased. As a result, the findings of this survey are more like indicators of the Perceived Quality and Perceived Utility and they do not fully represent the opinions of all the users. The following conclusions have been drawn based on the analysis performed:

- The DRS received a very **positive Perceived Quality (4.56) and Perceived Utility (4.48) assessment.** All of the measurements that were included in the Overall Score (Usefulness Score, Value Score, User Satisfaction Score and Net promoter Score) have high individual scores.
- The DRS is conformable to the Perceived Quality and the Perceived Utility dimensions (Support, Trust, Performance, Usability, Collaboration and Potential Re-usability).
- One of the respondents noted that elements related to scalability with regards to the number of systems using the services should already be taken into account.

Based on the conclusions drawn, CGI-Accenture advises the following recommendations:

- Regarding improvements, according to respondents, there is a need of a batch process that loads the data from a file. Also, it could be very useful to have an array of key-values as business metadata in order to make it more generic and reusable.

7 APPENDIX

7.1 RAW DATA EXPORT

The attached file contains the survey result export.

Raw data.xls

7.2 GLOSSARY

- A Likert Scale is a widely used scaling method developed by Rensis Likert. Likert scale refers to the use of an ordinal 4- or 5- point rating scale with each point anchored or labelled.

- The mean[11] (average) is the most popular measure of location or central tendency; has the desirable mathematical property of minimizing the variance. To get the mean, you add up the values for each case and divide that sum by the total number of cases;

- Mode[11] refers to the most frequent, repeated or common value in the quantitative or qualitative data. In some cases it is possible that there are several modes or none;

- The Net Promoter Score® (NPS) is a widely used management tool that helps evaluate the loyalty of a customer relationship. Customers are classified as Promoters, Passive and Detractors.

- 'Perceived Quality' is defined as the extent to which the outputs of an ISA action are meeting its direct beneficiaries' expectations;

- Standard deviation[11] shows the spread, variability or dispersion of scores in a distribution of scores. It is a measure of the average amount the scores in a distribution deviate from the mean. The more widely the scores are spread out, the larger the standard deviation;

- Standard error[11] is the standard deviation of the sampling distribution of a statistic. It is a measure of sampling error; it refers to error in estimates due to random fluctuations in samples. It goes down as the number of cases goes up. The smaller the standard error, the better the sample statistic is as an estimate of the population parameter – at least under most conditions;

- 'Perceived Utility' is defined as the extent to which the effects (impact) of an ISA action correspond with the needs, problems and issues to be addressed by the ISA programme;