

# **DIMAND: Human-Centered Design for Advanced Services**

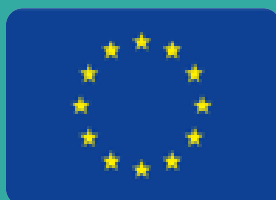
## **An Expert Survey**

**Name of response:**

**Institution:**

**Study field:**

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant No. 814078.



---

**Mondragon University – Faculty of  
Engineering  
--Design Innovation Center (DBZ)**

# Expert survey: skill-rating questionnaires

The following survey is useful in practice and research by answering relevant research questions, including:

- WHO (internal stakeholders or design team members, e.g., an engineer, a financial analyst, a marketer) needs to know and/or practice WHAT design methods (e.g., interview techniques, prototyping), as design skills, to perform one or more design activities (e.g., to understand customer latent needs, to use the wireframes for prototyping)
- WHO (internal stakeholders) should be trained WHAT (new service development methods)
- HOW the method can be prioritized in the built-in service building (training and skill enhancement)

The components of the survey include:

- FIVE role groups of design team members: (1) executive officers, (2) marketing analysts, (3) finance analysts, (4) engineers and/or technicians, (5) designers
- NINE groups of new service design methods are described by the following table as a summary but not limit to:

Idea exploration + Interview techniques + Survey techniques + ...	Participatory design + Workshop techniques + Participatory innovation methods + ...	Operations-centred methods + Service blueprints, flow charts + Service system navigation + ...
CX-centred methods + Empathy maps + Customer journey maps + Interaction maps + ...	<b>Prototyping methods</b> + Wireframes + UX/wireframe sketches + Sketches + ...	<b>Engineering methods</b> + TRIZ 40 principles + Lean + Modularity principle + ...
Evaluation methods + Hypothesis testing + Usability testing + Ergonomics evaluation methods + ...	<b>Idea clustering</b> + Idea ranking + Affinity diagram + Kano model	<b>Business analytics</b> + Game theory + Service lifecycle management + Business model canvas + ...

Basically, each expert answers the question for each questionnaire: how much a design method (e.g., idea exploration) is more preferred by a job role (e.g., Executive officers) to another job role (e.g., Marketing analysts) in the following 9-point pairwise scale evaluations:

Rating	Journal
1	A tool is equally important to two roles
3	A tool is slightly preferred by a role than another role on the other side
5	A tool is moderately preferred by a role than another role on the other side
7	A tool is strongly preferred by a role than another role on the other side
9	A tool is absolutely preferred by a role than another role on the other side

For example:

Which of following roles prefers the methods of Idea Exploration more than the other role on the same comparison row? (tick "X" ON THE EVALUATION SCALE)

A method is preferred by this role than the left-hand role	Equally									A method is preferred by this role than the right-hand role								
	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	
Executive officers			x														Marketing analysts	

- The tick "x"—of 7 on the left—indicates that, according to an expert's perspective, those who are "Executive officers" should be **strongly preferred** to know about the methods of Idea Exploration than those are "Marketing analysts"

Another example:

**Which of following roles prefers the methods of Idea Exploration more than the other role on the same comparison row?**

A method is preferred by this role than the left-hand role								Equally	A method is preferred by this role than the right-hand role								
9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	
Executive officers								x									Marketing analysts

- The tick “x” of 1 above indicates that, according to an expert’s perspective, both “Executive officers” and “Marketing analysts” should **equally** know about the methods of Idea Exploration

Each expert responses the following skill-rating questionnaires that are designed for each group of new service development methods: (1) idea exploration, (2) participatory design, (3) CX-centred methods, (4) idea clustering, (5) prototyping methods, (6) operations- centred methods, (7) business analytics, (8) engineering methods, (9) evaluation methods:

**Which of following roles prefers the methods of Idea Exploration more than the other role on the same comparison row?**

(Idea exploration contains a set of methods—such as desk research, field research, Delphi method—to explore business opportunities that could be realized and developed as advanced services considering the company and market context)

**(tick “X” ON THE EVALUATION SCALE)**

A method is preferred by this role than the left-hand role								Equally	A method is preferred by this role than the right-hand role								
9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	
Executive officers																	Marketing analysts
Executive officers																	Finance analysts
Executive officers																	Engineers / technicians
Executive officers																	Designers
Marketing analysts																	Finance analysts
Marketing analysts																	Engineers / technicians
Marketing analysts																	Designers
Finance analysts																	Engineers/technicians
Finance analysts																	Designers
Engineers/technicians																	Designers

**Which of following roles prefers the methods of Participatory design more than the other role on the same comparison row?**

(Participative design contains a set of methods—such as group discussion, workshops, focus groups—to put humans in the central of design; more specifically, to actively involve all stakeholders across the life-cycle design)

**(tick “X” ON THE EVALUATION SCALE)**

A method is preferred by this role than the left-hand role								Equally	A method is preferred by this role than the right-hand role								
9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	
Executive officers																	Marketing analysts
Executive officers																	Finance analysts
Executive officers																	Engineers / technicians
Executive officers																	Designers
Marketing analysts																	Finance analysts
Marketing analysts																	Engineers / technicians
Marketing analysts																	Designers
Finance analysts																	Engineers/technicians

Finance analysts																				Designers
Engineers/technicians																				Designers

Which of following roles prefers the methods of CX-centred methods more than the other role on the same comparison row?  
(CX-centred methods contain a set of methods—such as empathy maps, customer journey maps, interaction maps—to put humans in the central of design; more specifically, to identify and optimize customer experiences at all touchpoints before, during and after service processes)  
**(tick “X” ON THE EVALUATION SCALE)**

A method is preferred by this role than the left-hand role										Equally	A method is preferred by this role than the right-hand role									
	9	8	7	6	5	4	3	2		1		2	3	4	5	6	7	8	9	
Executive officers																				Marketing analysts
Executive officers																				Finance analysts
Executive officers																				Engineers / technicians
Executive officers																				Designers
Marketing analysts																				Finance analysts
Marketing analysts																				Engineers / technicians
Marketing analysts																				Designers
Finance analysts																				Engineers/technicians
Finance analysts																				Designers
Engineers/technicians																				Designers

Which of following roles prefers the methods of Idea clustering more than the other role on the same comparison row?  
(Idea clustering contains a set of methods—such as affinity diagram, Kano model—to analyse and categorize the needs/requirements of human (e.g., customers and partners) into meaningful groups of service opportunities that lead to a single and/or bundle of advanced services)  
**(tick “X” ON THE EVALUATION SCALE)**

A method is preferred by this role than the left-hand role										Equally	A method is preferred by this role than the right-hand role									
	9	8	7	6	5	4	3	2		1		2	3	4	5	6	7	8	9	
Executive officers																				Marketing analysts
Executive officers																				Finance analysts
Executive officers																				Engineers / technicians
Executive officers																				Designers
Marketing analysts																				Finance analysts
Marketing analysts																				Engineers / technicians
Marketing analysts																				Designers
Finance analysts																				Engineers/technicians
Finance analysts																				Designers
Engineers/technicians																				Designers

Which of following roles prefers the methods of Prototyping methods more than the other role on the same comparison row?  
(Prototyping methods contain a set of methods—such as UX/wireframe sketch, scenarios, paper prototyping—to prototype, realize and evaluate design ideas of advanced services)  
**(tick “X” ON THE EVALUATION SCALE)**

A method is preferred by this role than the left-hand role										Equally	A method is preferred by this role than the right-hand role									
	9	8	7	6	5	4	3	2		1		2	3	4	5	6	7	8	9	



