## MONDRAGON UNIBERTSITATEA



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DIMAND: Human-Centered Design for Advanced Services

# **An Expert Survey**

Name of response: Institution: Study field:

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	Participatory design	Operations-centred methods
+ Interview techniques	+ Workshop techniques	+ Service blueprints, flow charts
+ Survey techniques	+ Participatory innovation methods	+ Service system navigation
+	+	+
CX-centred methods	Prototyping methods	Engineering methods
+ Empathy maps	+ Wireframes	+ TRIZ 40 principles
+ Customer journey maps	+ UX/wireframe sketches	+ Lean
+ Interaction maps	+ Sketches	+ Modularity principle
+	+	+
Evaluation methods	Idea clustering	<b>Business analytics</b>
+ Hypothesis testing	+ Idea ranking	+ Game theory
+ Usability testing	+ Affinity diagram	+ Service lifecycle management
+ Ergonomics evaluation methods	+ Kano model	+ 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 <u>Idea Exploration</u> more than the other role on the same comparison row? (tick "X" ON THE EVALUATION SCALE)

A method is preferred by	y this	role	than t	the le	ft-ha	nd ro	le		Equally	A	meth	od i	s pre	ferre	d by	this	role	than the right-hand role
	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 <u>Idea Exploration</u> than those are "Marketing analysts"

#### Another example:

Which of following role	es pr	efers	the <b>r</b>	neth	ods o	f <u>Ide</u>	a E	xplo	ration_mo	re th	an tl	he ot	her	role	on t	he sa	me	comparison row?
A method is preferred by	nethod is preferred by this role than the left-hand role Equally															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									х									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 <u>Idea Exploration</u>

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 <u>Idea Exploration</u> 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	y this	role	than	the le	eft-ha	nd ro	le		Equally	A	neth	od is	s pret	ferre	d 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 <u>Participatory design</u> 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)

	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 <u>CX-centred methods</u> 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	y this	role	than	the le	ft-ha	nd ro	le		Equally	A	meth	od is	s pre	ferre	d 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 <u>Idea clustering</u> 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	y this	role	than t	he le	ft-ha	nd ro	le		Equally	A	meth	od is	s pret	ferre	d 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
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Marketing analysts																		Designers
Finance analysts																		Engineers/technicians
Finance analysts																		Designers
Engineers/technicians																		Designers

Which of following roles prefers the methods of <u>Prototyping methods</u> 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	y this	role	than t	the le	ft-ha	nd ro	le		Equally	A	meth	od is	s pre	ferre	d 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 **Operations-centred methods** more than the other role on the same comparison row?

(Operations-centred methods contain a set of methods—such as service blueprints, service system navigation—to enable design teams to understand how the customers and/or partners see or experience the proposed advanced services)

#### (tick "X" ON THE EVALUATION SCALE)

A method is preferred by	v this	role	than 1	the le	ft-ha	nd ro	le		Equally	A	meth	od is	s pre	ferre	d 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
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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 **Business analytics** more than the other role on the same comparison row? (Business analytics contains a set of methods—such as Business Process Model and Notation, key performance indicators—to enable design teams to manage, monitor, and analyse the business processes of design and delivery for advanced services toward their continuous improvement)

## (tick "X" ON THE EVALUATION SCALE)

A method is preferred by	le		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 <u>Engineering methods</u> more than the other role on the same comparison row? (Engineering methods contain a set of engineering methods—such as TRIZ 40 principles and contradiction matrix, Lean—to facilitate design teams brainstorm creative ideas for analysing and improving the business processes of design and delivery for advanced services toward their continuous improvement)

#### (tick "X" ON THE EVALUATION SCALE)

A method is preferred by		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 <u>Evaluation methods</u> more than the other role on the same comparison row? (Evaluation methods contain a set of methods—such as usability evaluation, statistical tests, ergonomics methods—to enable design teams to evaluate quantitatively the business processes of design and delivery for advanced services, establishing the base toward their continuous improvement)

# (tick "X" ON THE EVALUATION SCALE)

A method is preferred by		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
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