

## Needs Assessment of Research Support as Initiative Process of Service Design for Academic Library Service

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### Abstract

Service design is a process to increasingly manage customer experiences for innovative solutions through the research and development cycle. The study aimed at conducting the needs assessment for research support services of academic libraries in Thailand for overall satisfaction and prioritization of four services such as reference service, training service, circulation service, and facilities. The sample included 405 graduate students and faculty staff from the top eight research universities. Data were collected via questionnaires and then analyzed through descriptive statistics such as frequency distribution, percentage, mean and standard deviation. The needs assessment was analyzed with Modified Priority Needs Index (PNI<sub>modified</sub>). The research results reveal that the overall services' satisfaction is at a moderate level while the four services of needs are prioritized from most to least as follows: reference services (PNI<sub>modified</sub>=0.23), training services (PNI<sub>modified</sub>=0.17), facilities (PNI<sub>modified</sub>=0.16), and circulation services (PNI<sub>modified</sub>=0.14), respectively. The most needed items are funding source guide (PNI<sub>modified</sub>=0.31) following with paper writing (PNI<sub>modified</sub> = 0.27), copyright and patent guide (PNI<sub>modified</sub> = 0.27), and international interlibrary loan (PNI<sub>modified</sub> = 0.27). This survey will be further contributed to three stages of the IDEO service design model for research support of the academic library.

**Key words:** *Needs assessment, Research support, Services design, Academic library*

### 1. Introduction

Information and communication technology has driven economic and social change over the past few decades that allows the public sector of many countries to develop economic and social management in order to comply with the change and to operate businesses sustainably. ICT creates a creative economy concept in the economic and social development of the country including creative industries as a strategy for corporate and business management. UNCTAD (2019) reported that the creative economy has generated more than US\$ 208 billion in global market value which doubles each decade. This shows that creative products and products are essential for driving the economy both nationally and globally (Office of Thai Trade and Economy, 2019) In the concept of creative economy, the development of products or services in accordance with the constantly changing social and technological conditions requires the use of research principles that are a systematic and methodological process to find facts or

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phenomena. Research process must be reliable or scientifically rational to acquire knowledge and facts that discover and use the results in decision-making, problem-solving, new knowledge generation (Best, 1981).

According to the SCImago Journal & Country Rank survey, 2019, the number one country that published research and academic works was the United States, with 12,839,607 entries (22.83 percent) out of 240 countries. Thailand was ranked 44th with 199,226 academic achievements (0.34 percent) and 9th in Asia out of 33 countries (Scimago Lab, 2020). Most of the research works are done by higher education institutions, as well as being a learning and research center for faculty and students and their main mission to support research. The research includes both research at each level of higher education as university staff and graduate students that breakthrough in knowledge and create innovations. Many universities focus on research by driving policy in teaching and learning which integrates research into courses as well as promotes the research works. Thus, the university library is an important information source for main supporting university research policy. The research support service is provided for proactively assisting faculty, researchers, and students in the research process from the beginning until finishing with advances in information technology. According to most of the research process is electronically called e-Science or e-Research which forces libraries to develop and invent new services to support user research effectively (Marlina & Purwandari, 2019).

The concept of service design arises around 1990, where many countries originally focus on manufacturing. The concept of service design arises around 1990, where many countries originally focus on the manufacturing economy resulting in production is important. Later found service is an integral part of creating economic value for a country, therefore economic policy has been transformed into service economies (Brown, Gustafsson, & Witell, 2009). Service design is unique in value creation with customers which brings design thinking concepts to help develop the form of works, services, and products that are able to generate maximum benefit. Service design is a user-centered design to create the greatest impression on customers. The IDEO (2015) is a global design consulting company which determined to design a service for libraries in three main steps: 1) Inspiration is about framing a design challenge and discovering new perspectives on the opportunity, 2) Ideation is about generating ideas and making them tangible, and 3) Iteration is about continual experimentation based on user feedback.

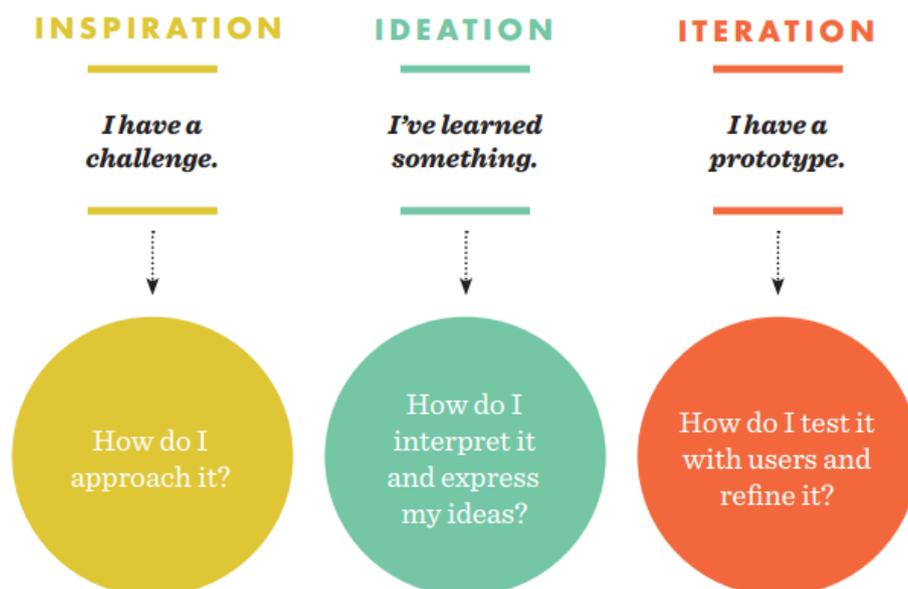


Fig. 1. The service design process from the design thinking concept (IDEO, 2015, p. 9)

Research is the process of finding facts in order to gain a new knowledge asset, both theoretical and practical, that offers academic value. It assists in decision-making, problem-solving, and innovation creating that causes economic and social value. University is a leading research institution while its library provides research support services. In addition, the university library has to modify the service to meet the researchers' needs and the technology advances. Research support services nowadays are challenged in many university libraries with more advances in technology. Therefore, the researchers have been interested in design a user-centric research support service by exploring the needs of the services that are truly in line with library users, such as faculty, research staff, and graduate students, who have to do their research as academic achievements and graduation. The findings can be employed in the initial stage of IDEO's user-centric service design. This is consistent with the research promotion policy of many universities in both national and international aspects.

### 3. Methodology

Quantitative research is conducted. The 405 samples containing 310 graduate students, 86 faculty, and 9 research staff of public universities are purposely selected in the academic year 2020. The research instrument includes questionnaires evaluated by three experts for content validity of questions with IOC more than 0.50 and 30 try-out samplings with Cronbach's Alpha equaled 0.96. Since the Covid-19 pandemic, data are collected by both printed and online questionnaires from December 2020 till January from the top-eight research universities of Thailand with the assistance of academic librarians.

Data are statistically analyzed through arithmetic mean and standard deviation. After that uses the Modified Priority Needs Index ( $PNI_{modified}$ ) for assessing the needs. Needs assessment is to assess the essential needs based on the service needs of the library users in selected universities. The method was used to analyze the difference between the current condition (D) and the expected conditions (I) for the research support service of university libraries according to the  $PNI_{modified}$  formulation of Wongwanich (2015). It was determined the necessity of the research support service by prioritizing the order of library users' needs.

### 4. Results and analysis

It is shown that 4 service aspects of needs are prioritized as follows: reference services ( $PNI_{modified} = 0.23$ ), training services ( $PNI_{modified} = 0.17$ ), facilities ( $PNI_{modified} = 0.16$ ), and circulation services ( $PNI_{modified} = 0.14$ ) respectively. The most needed items are funding source guide ( $PNI_{modified}=0.31$ ) following with paper writing ( $PNI_{modified} = 0.27$ ), copyright and patent guide ( $PNI_{modified} = 0.27$ ), and international interlibrary loan ( $PNI_{modified} = 0.27$ ) as shown in Table 1.

Table 1. Needs assessment of research support service of faculties, research staff, and graduate students (n = 405)

Research Support Service	I	D	(I-D)/D	Priority
1. Reference Services	4.04	3.27	0.23	(1)
1.1 Dissemination selected service (DSS)	4.07	3.41	0.19	7
1.2 Current awareness service	4.15	3.56	0.17	9
1.3 Project writing and research method guides	4.01	3.19	0.26	3



Research Support Service	I	D	(I-D)/D	Priority
1.4 Subject specialist service	4.10	3.38	0.21	6
1.5 Funding source guide	3.92	3.00	0.31	1
1.6 Paper publishing guide	4.11	3.28	0.25	4
1.7 Copyright and patent guide	3.92	3.09	0.27	2
<b>2. Training Services</b>	<b>4.15</b>	<b>3.52</b>	<b>0.17</b>	<b>(2)</b>
2.1 Technique and tool for research discovery	4.20	3.71	0.13	13
2.2 Research information literacy	4.15	3.54	0.17	9
2.3 Plagiarism	4.21	3.67	0.15	11
2.4 Research information source	4.25	3.70	0.15	11
2.5 Project writing and research method	4.05	3.32	0.22	5
2.6 Paper writing	4.04	3.19	0.27	2
<b>3. Facilities</b>	<b>4.16</b>	<b>3.56</b>	<b>0.16</b>	<b>(3)</b>
3.1 Bibliographic management	4.20	3.76	0.12	14
3.2 Co-working and research space	4.32	3.62	0.19	7
3.3 Research networking	4.08	3.35	0.22	5
3.4 Research management program	4.14	3.50	0.18	8
3.5 Plagiarism tool (Turnitin)	4.19	3.71	0.13	13
3.6 Research data management	4.17	3.55	0.17	9
3.7 Institutional repository: IR)	4.17	3.59	0.16	10
3.8 Bibliometric tools	4.07	3.44	0.18	8
<b>4. Circulation Service</b>	<b>4.10</b>	<b>3.60</b>	<b>0.14</b>	<b>(4)</b>
4.1 Interlibrary loan within university libraries	4.24	3.96	0.07	16
4.2 Domestic interlibrary loan	4.15	3.58	0.16	10
4.3 International interlibrary loan	3.87	3.04	0.27	2
4.4 Book delivery via postal	4.06	3.71	0.10	15
4.5 Book delivery via Internet	4.22	3.72	0.14	12

## 5. Discussion

Due to the university library, the research support tasks for faculty, research staff, and students should be in accordance with the users' needs. The research support service is rather new and required more creativity in order to keep abreast of changes in disciplines and research methods. The research process requires the relevant knowledge from quality information sources such as academic library through its resources and services. The reference services are the basic services provided in library that is simply personal assistance to library users seeking information and learning with human interaction, particularly in academic libraries where provide research assistance and guidance to the users (Downing, 2008). It can be considered the heart or core public services of the library by offering effective and high quality user-centered reference services to meet the users' needs (Kuruppu, 2007). The reference services for research support must be proactively and continuously assists the researchers from the first step until they publish their works or the end of research processes with the librarians' participation thorough the processes (Xie & Sun, 2015). The most need of users for research support service is the funding source guide because the research project takes much time and money to achieve the quality work. This finding is consistent with the works of Borrego and Anglada (2018); Haddow and Mamtora (2017), as well as Suptanon (2009).

## 6. Conclusion and Recommendations

The research results reveal that the library users need more cutting-edge services in the advice of research funding sources and other relevant. The results will be the topic to investigate the users' problems and requirements as the initial stage of service design in the next phase of this research project. The service design will be driven by the design mindset, trying to find elegant and innovative solutions through iterative cycles of research and development.

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