Level of readiness of users of integrated information systems at UIN Sunan Gunung Djati Bandung using framework Strategy, Technology, Organization, People, Environment (STOPE)

R J Abidin*, M Irfan, C N Alam and M A Azis
Informatics Department, Faculty of Science and Technology, UIN Sunan Gunung Djati Bandung, Jl. A.H. Nasution No. 105 Cibiru Bandung, Indonesia

*rahmat.zainal@uinsgd.ac.id

Abstract. The optimal utilization of integrated information systems at state universities will be obtained if there are readiness users in the implementation of information technology. Knowing the readiness level of users required as readiness evaluation in the application of an integrated information system. Evaluation of users readiness level at the State Islamic University of Sunan Gunung Djati Bandung in the implementation of integrated information systems based on STOPE Framework, this is aiming to measure users readiness level at State Islamic University of Sunan Gunung Djati Bandung to integrated information systems and providing a recommendation base on evaluation result and influence identification of domains on STOPE Framework. Approaching methods or frameworks are made and suggested to analyse the level of readiness. One of them is the STOPE framework approaching, which is used for this research. Strategy, Technology, Organization, People, and Environment (stope) are the development of the Listone method which research the development of technology in society by notice 3 of the main domains, such technology, "T", Institution or organization and the individual or people. The goal of this research is to give valuation through the readiness of integrated information system users, which is useful for developing an integrated information system. The valuation of readiness in this research by using the STOPE framework, evaluation of 5 domains, 16 issues, and 39 Factors. The result of the analysis shows that from all Strategy, Technology, Organization, People, and Environment of Islamic State University, Sunan Gunung Djati Bandung is ranked 3 on scale 4 through the Integrated information system. Of the STOPE framework, the Islamic State University of Bandung level is ranked 3 on scale 4 through an integrated system.

1. Introduction
The application of technology in various fields that exist in the environment of man brings a lot of impacts, such as information becomes available is wide, fast, and precise [1]. so that it can be easier for humans to access wherever and whenever he is. Technology Information is a technology that can be used to process the data, including processing, obtain, compile, store, and manipulate the data in various ways to produce information that is of quality, such as information that is relevant, accurate, and precise time [2]. Technology Information using a device computer to manage the data, the system network is used to connect a computer to a computer that is more appropriate to the needs, and the
technology of telecommunications can be used to easily distributed and accessible as global. Technology information is a tool that can provide information to the user to obtain the data or information that can support the accuracy in making the decision to use technology that is appropriate for [3].

In the era of the information activities of an organization are not separated from the role of system information (SI), SI is a means mainstay to win the competition in business services education to help University High in realizing and improving the quality of service to consumers, became the trigger also for college high to be able to create a process and the activities of education that cost, quality, and fast [4]. System Information (SI) to help the organization of modern become more organized and able to meet the objectives they are more effective [5]. Information Technology (IT) is one of the means to improve the company and business performance [6]. In terms of this, UIN Sunan Gunung Jati Bandung has a system of information that helps the user to create, modify, store, communicate, and disseminate information. Optimal utilization of this Information System will be obtained if there is readiness from the campus community towards the Integrated Information System. System Information that either can be used not only for storage of data, communicate, and disseminate information in electronic alone but must be able to support the process of analysis that is required by management. So, with the support of system information that is either then obtained the information that is accurate, reliable, sophisticated, and easily accessible on the condition of the business enterprise. With the reports were presented by rapidly and every moment can be accessed are the decision - a decision that was taken by the leadership of the agency can more quickly and precision of the dynamics of the market there [7].

Many methods of approach or framework that is created and proposed to analyse the level of readiness. One of them is the STOPE framework approach that will be used in this study. Framework strategy, technology, organization, people, and environment (stope) is the development of methods Linstone which examines the development of technology in society to pay attention to three domains the main, technology: "T", institutions or organization: "O", and individuals or people: "P". Bakery, the originator of the STOPE framework, added two items, namely strategy: "S" and environment: "E", so it became "STOPE" [8].

To implement a system of information integrated into an organization need to know the level of readiness up first. Readiness in the aspects of technology or Technology Readiness (TR) is how an individual or organization can be ready to adapt, use, and exploit the technology in the activities of their day-to-day [6]. Framework stope is a framework that is suitable used to be adopted in knowing the level of readiness of the system of information integrated, framework stope part of TR that can give a rating to a system with measurement systematics with emphasis domain primary i.e. Strategy, Technology, Organization, People and Environment and sub-domains and subdomains. Increasingly many systems of information integrated into UIN Sunan Gunung Jati Bandung, it is necessary to do an assessment and measurement of the degree of readiness of the system information integrated it will minimize the level of difficulty, risks, and errors that exist [6,9]. If not in the know up to advance the level of readiness will lead to a failure in its implementation For that, testing the level of readiness of the Integrated Information System at UIN Sunan Gunung Djati Bandung needs to be done.

2. Literature review

2.1. Integrated information system

Integrated information systems are technology platforms that enable organizations to relate and coordinate their business processes, characteristics of integrated information systems about a high level of integration (integration) to accommodate integrated data/information needs [5].
2.2. Technology readiness
The Technology Readiness Index (TRI) began to be developed by parasaruman. In its journal, it refers to the tendency of a person/individual to use and utilize new technology in achieving their goals both in daily life and in the world of work [10]. So, readiness in the aspect of technology or Technology Readiness is how an individual, organization, or institution can be ready to adapt, using information systems in their daily activities.

2.3. STOPE framework
The STOPE Framework is a new comprehensive framework for enterprise information security risk management [11]. STOPE is divided into three levels, domains, sub-domains (issues), and sub-sub-domains (factors) that allow ranking of assessments separately or integrally between levels. The level of issues and factors in the STOPE framework is a fusion of the previous ten e-readiness assessment methods to produce a complete and integral measurement method. The framework has also been developed and used to evaluate various Information and Communication Technology (ICT) issues, such as e-government and e-business planning and information security management [7].

The STOPE method is more flexible in the selection and use of items. The use of items, especially at the level of issues and factors can be adjusted to the needs of the research object. This makes the assessment method using the STOPE framework approach more flexible and can be used to assess country and organizational scale readiness. For the organization scale, the STOPE framework can be used in evaluating various types of organizations, including private government, banking, and educational institutions [6]. The STOPE Framework was chosen because it has domains that are relationships of various factors that have been used in various studies to measure e-readiness [9].

Figure 1. Basic elements of STOPE development.

The STOPE Framework consists of 5 main Domains namely Strategy, Technology, Organization, People, and Environment. Domain Strategy consists of issues of IT Leadership and Future Developments Plans. Domain Technology consists of IT Provisioning, IT Basic Infrastructure, IT e-Services Infrastructure, and IT Support. Domain Organization consists of issues of IT Regulation, IT Cooperation, and IT Management. Domain People consist of issues of IT Jobs, IT Awareness, IT Performance, and IT Education. Domain Environment consists of Management, Knowledge, General Infrastructure, and Economy issues.
3. Analysis and design

3.1. Analysis of current conditions
The stage of this analysis is an activity in understanding the current conditions of the object to be measured [12]. That is the object about the readiness of integrated information system users, wherein the current condition there is no research that measures the readiness of integrated information system users.

3.2. Samples
The sample is a subgroup of the population that has been selected for use in the study [13]. In this study non-opportunity sampling was used. This means that everyone does not have the same opportunity to fill out this questionnaire. Because researchers have a target of certain individuals who are thought to be most suitable for filling out this questionnaire. The number of samples in this study was set as many as 30 samples.

3.3. Using the STOPE framework

3.3.1. Modification of the STOPE framework. The framework used needs to be modified to suit the case study [14]. Some items in the STOPE framework are modified (eliminated)/eliminated, especially in the subdomain/issue and sub-domain /factor sections so that they can be used in this study.

3.3.2. Compilation of data collection instruments. The preparation of data collection instruments in the form of questionnaires refers to the results of previous modifications [12]. The questionnaire was shown to get the importance and measure at each level.

3.3.3. Research instruments. This research instrument consisted of two pieces of letters, one introductory letter from the researcher as a request for filling out the questionnaire, and five sheets of research questions consisting of thirty-nine test questions based on a predetermined theme.

3.3.4. Survey and data collection. Data is collected at the location of the research object. The result is raw data from the respondent's answer. Hardcopy questionnaires are distributed to employees and the academic community as those who use integrated information systems.

3.3.5. Analysis and ranking. Processing results provide the basis for analysis and ranking and e-readiness in research. The e-readiness ranking uses a 4-point scale e-readiness ranking issued by [15]. The 4-point scale refers to the ranking of e-readiness assessments issued by the Center for International Development / CID (Harvard Cyber Law) [15].

- The lowest scale 1 condition is not ready with a percentage of 0 - 36.
- Scale 2 is quite ready with a range of 36-61.
- Scale 3 ready conditions with a range of 61-86.
- The highest scale 4 conditions are very ready range 86 - 100.

4. Result and discussion
The value of the readiness level of the integrated information system user is 3 (ready) on a scale of 4 that is by Figure 2, that the measure value of the STOPE framework is 2.243860193 with a percentage of 74.79%. This shows that the user of the system is ready to implement the Integrated Information System.
This research provides recommendations to IT Sunan Gunung Djati State Islamic University Bandung as a provider of Integrated Information Systems applications to support the successful implementation of Integrated Information Systems applications in terms of 5 aspects, namely:

4.1. **Domain strategy**
Perform improvements to the Integrated Information System application both in terms of user interface design and appearance.

4.2. **Domain technology**
Perform data backup processes on the Integrated Information System application periodically to reduce failures and delays when accessed, collaborate with internet network providers to improve the quality of the internet network evenly, and realize the establishment of a special section of IT managers at Integrated Information System providers at UIN Sunan Gunung Djati Bandung so that any failures or delays that occur can be responded responsibly.

4.3. **Domain organization**
Adding passwords to the Integrated Information System application to improve user security and conducting socialization activities with the aim of providing an understanding of the business processes of the Integrated Information System including the understanding of security and convenience created by the Integrated Information System application.

4.4. **Domain people**
Providing further direction evenly to users of the Integrated Information System application related to the advantages of using the Integrated Information System application and even introduction to the user of the Integrated Information System application related to the media and the procedure of using the Integrated Information System application either through online media or offline.

4.5. **Domain environment**
Increasing training activities evenly among all employees and students (different educational, cultural, economic backgrounds) and understanding of the positive impacts of using Integrated Information Systems applications and the legal framework underlying the application of Integrated Information Systems built.

5. **Conclusion**
Based on the results of the final project research, several conclusions can be drawn as follows:

- The level of user readiness, namely the academic community of UIN Sunan Gunung Djati Bandung in the implementation of the Integrated Information System application is 74.79%.
This shows that the level of readiness of users of the Integrated Information System application is at level 3 with the category (Ready).

From the calculation using the STOPE framework, the value of 5 domains is generated, namely the Strategy domain has the highest measure value of 2.34 (78%). Whereas the smallest measure value is in the Environment domain with a value of 2.17 (72.33%). For the Technology, Organization, and People domains, respectively, the measure values are 2.25 (75%), 2.21 (73.66%), and 2.22 (74%). It can be concluded that employees and students of UIN Sunan Gunung Djati Bandung as users of the Integrated Information System application have readiness on all variables or domains in the STOPE framework.

References

[1] Ardyanto F 2017 Evaluasi Kualitatif Kesiapan Penerapan Sistem Single Sign On di UIN Syarif Hidayatullah Jakarta (Thesis) (Jakarta: UIN Syarif Hidayatullah Jakarta)

[2] Wiranto S 2014 Penerapan Teknologi Informasi dan Komunikasi Sebagai Media Interaksi Guru-Siswa di SMPN I Arjosari Pacitan (Surakarta: UMS)

[3] Lasminiahs L Akbar A Andriansyah M & Utomo R B (2016) Perancangan Sistem Informasi Kredit Mikro Mahasiswa Berbasis Web Sriwijaya Journal of Information Systems 8(1) 131627

[4] Qadrya H A 2017 Faktor-Faktor yang Mempengaruhi Kesiapan Penerapan Sistem Single Sign-On di UIN Syarif Hidayatullah Jakarta (Jakarta: UIN Syarif Hidayatullah Jakarta)

[5] Zaidir A A 2017 Analisis dan Perancangan Sistem Informasi Terintegrasi untuk Manajemen Produksi Persediaan dan Distribusi Barang (Studi Kasus: Fabrik Kemasan Kertas CV Yogyakarta) Respasi 12(2)

[6] Setyawawan W M H, Winarno W W and Luthfi E T 2016 Evaluasi Kesiapan Perguruan Tinggi dalam Penerapan Sistem Informasi Akademik Jurnal Informa 1(3) 52-60

[7] Septiania I, Irfan M, Atmadja A R and Subaei B 2016 Sistem Pendukung Keputusan Penentu Dosen Penguji Dan Pembimbing Tugas Akhir Menggunakan Fuzzy Multiple Attribute Decision Making dengan Simple Additive Weighting (Studi Kasus: Jurusan Teknik Informatika UIN SGD Bandung) Jurnal Online Informatika 1(1) 43-50

[8] Susanto H, Susanto A and Winarno W W 2014 Pendekatan Framework STOPE untuk Kesiapan Pengalihan PBB pada Pemerintah Daerah Kabupaten Gunungkidul SEMNASTEKOMEDIA ONLINE 2(1) 3-03

[9] Manaf K, Alam C N, Rahman A B A, Subaei B and Kaffah F M 2019 Combination of e-readiness models to assess based on system approaches at cooperatives in Indonesia In Journal of Physics: Conference Series 1402(6) 066110

[10] Idris I and Delvika Y 2018 Analisis perancangan sistem informasi terintegrai di lingkungan perguruan tinggi swasta di medan Jurnal Teknovasi: Jurnal Teknik dan Inovasi 1(2) 15-26

[11] Cahyati R D 2019 Evaluasi Kesiapan Masyarakat Jember Dalam Penerapan Aplikasi War (We Are Ready) Menggunakan Framework Stope (Studi Kasus: Polres Jember) (Jember: Universitas Jember)

[12] Septikhtiarif F and Handayaningish S 2017 Pengukuran E-Readiness Menggunakan Framework Stope Pada Proses Pengajuan Cuti Akademik Perguruan Tinggi In Annual Research Seminar (ARS) 3(1) 173-178

[13] Pradana M and Reventiary A 2016 Pengaruh atribut produk terhadap keputusan pembelian sepatu merek Customade (Studi di merek dagang Customade Indonesia) Jurnal Manajemen 6(1)

[14] Al-Osaimi K I S 2007 Mathematical Model for E-readiness Assessment of Organizations with Intranets King Saud University Saudi Arabia Unpublished Magister Thesis

[15] Susanto H 2014 Pendekatan Framework STOPE untuk Mengukur Kesiapan Pengalihan PBB pada Pemerintah Kabupaten Gunungkidul Jurnal Nasional Teknik Elektro dan Teknologi Informasi (JNTETI) 3(2) 103-108