THE UNIVERSITY OF SYDNEY

School of Information Technologies
Faculty of Engineering & IT

ASSIGNMENT/PROJECT COVERSHEET - INDIVIDUAL ASSESSMENT

Unit of Study: INFO 5991 Service Science Management and Engineering

Assignment name: Construct a synthesis grid

Tutorial time: THUR 19:30-21:00

Tutor name:

DECLARATION

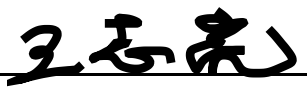
I declare that I have read and understood the *University of Sydney Academic Dishonesty and Plagiarism in Coursework Policy*, and except where specifically acknowledged, the work contained in this assignment/project is my own work, and has not been copied from other sources or been previously submitted for award or assessment.

I understand that failure to comply with the the *Academic Dishonesty and Plagiarism in Coursework Policy*, can lead to severe penalties as outlined under Chapter 8 of the *University of Sydney By-Law 1999* (as amended). These penalties may be imposed in cases where any significant portion of my submitted work has been copied without proper acknowledgement from other sources, including published works, the internet, existing programs, the work of other students, or work previously submitted for other awards or assessments.

I realise that I may be asked to identify those portions of the work contributed by me and required to demonstrate my knowledge of the relevant material by answering oral questions or by undertaking supplementary work, either written or in the laboratory, in order to arrive at the final assessment mark.

Student ID: 460094203

Student name: Zhiliang Wang

Signed  **Date** 12/04/2018

SIT Building, J12
The University of Sydney
NSW 2006 Australia

T +61 2 9351 3423
F +61 2 9351 3838
E sit.info@sydney.edu.au
sydney.edu.au/it

ABN 15 211 513 464
CRICOS 00026A

NEWTOWN BANK Ltd.

Increasing Profitability with better IT Infrastructure Investments

Construct a synthesis grid

Specializing: Service-oriented architecture

Name: Zhiliang Wang

SID: 460094203

Date: 12/April/2018

Table of Contents

1. Source REVIEW

Source	Author	Relevance	Expertise of author	Viewpoint of author	Intended audience	Evidence	When published	Schoarly or not
"How DBS Bank Pursued a Digital Business Strategy"	Siew Kien Sia, Christina Soh, Peter Weill. (2016)	Newtown bank is urgent to transform from traditional enterprises to digital enterprises, so they can accommodate digital innovation to improve service in traditional bank.	Siew Kien Sia is Director of the Information Management Research Centre (IMARC) and Associate Professor of Information Systems at the Nanyang Business School, Nanyang Technological University, Singapore and his main research interests are in process redesign, enterprise systems, enterprise integration, complex organization design and the development of digital capabilities. Christina Soh is a professor and head of the Division of IT and Operations Management at the Nanyang Business School, Nanyang Technological University. Her areas of research include the management of IT resources in global enterprises, strategy and technology innovation, the management of complex, enterprisewide IT projects, and electronic marketplaces. Peter Weill is the Chairman of MIT Sloan Center for Information Systems Research (CISR) and Senior Research Scientist at MIT Sloan School of Management. His research interest is the role, value and governance of digitalization.	For many organizations, pursuing digital transformation is a business imperative due to the threats and opportunities from digital disruptions are fast becoming a reality.	For further investigators.	21 reference articles are cited by this article.	Published in 2016, which is still influential.	Yes.

"A Decision Making Framework for SOA Adoption in e-Banking: A Case Study Approach"	Nikolaos Basias, Marinos Themistocleous, and Vincenzo Morabito. (2015)	The reason of many organizations that failed to achieve the benefits from SOA adoption is attributed to lacking of a framework that takes multiple crucial factors into account. Thus, Newtown bank should consider the experiences and conclusions from this case study.	Nikolaos Basias is a research associate and a Ph.D candidate at the University of Piraeus in Greece. His main research interests involve E-business, E-banking, Information Systems Management, Integration and Project Management. Marinos Themistocleous is a Professor at the Department of Digital Systems at University of Piraeus, Greece. He holds a B.Sc. in Computer Science, a Postgraduate Degree in Teaching and Learning in Higher Education, a M.Sc. in Information Systems Management and Ph.D. in Informatics and his current research interests include Information Systems, Information Systems Management, Service-Oriented Architectures, e-business and Net-Centric Information Systems. Vincenzo Morabito is an Associate Professor in the Department of Management and Technology. His research interest is management of corporate information systems which are focusing on the link between IT and productivity; organization and governance of information systems in the banking industry; adoption and implementation of information systems for management control.	The purpose of the resource is to provide support for further studies, because this paper extends the body of knowledge and provides new insights related to SOA adoption in e-banking .	For further investigators.	9 reference articles are cited by this article.	Published in 2015, which is still influential.	Yes.
"Critical Success Factors (CSFs) of ServiceOriented	C. Annamalai and A.V. Ramani. (2015)	This essay tells that the business process	C. Annamalai has experience for more than 20 years in research and teaching of computer science and	The main purpose of the research is to	For further investigators.	2 reference articles are	Published in 2015, which	Yes.

Architecture (SOA) in BIG DATA Systems"		reengineering (BPR) can be succeed through aligning software reengineering procedures with business process management techniques. Thus the Newtown bank could learn methods from this conlusions.	information technology and admin. He has published several papers in diverse fields of science and technology and reviewed recent IT and Computer books published by William Stallings (USA) and many other articles published by IEEE journals and top journals in the fields of computing sciences and its related subjects.	find out the critical success factors that are needed to implement SOA in big data systems such as Cloud Enterprise Resource Planning (CERP) in India.		cited by this article.	is still influential.	
"A quality-driven approach for resources planning in Service-Oriented Architectures"	Marcelo Teixeira, Richardson Ribeiro, Cesar Oliveira, Ricardo Massa. (2015)	This paper describes an innovative approach to estimate performance and availability of SOA systems using Generalized Stochastic Petri Nets (GSPN).	Marcelo Teixeira achieved B.Sc. in Computer Science , M.Sc in Computer Engineering and PhD in Automation & Systems Engineering , including the sandwich doctoral stage with the Research Group on Formal Methods , at the Department of Computer Science of the University of Waikato , Hamilton, New Zealand.	The purpose of the resource is to provide support for further studies, due to few studies have a comprehensive result of economic potential of SOA.	For further investigators.	12 reference articles are cited by this article.	Published in 2015, which is still influential.	Yes.

2. Synthesis grid on service-oriented architecture

In-text citation of source in APA 6thformat	**Definition and explanation of characteristics of the IT strategy in which you are specialising**	**General benefits**	**General challenges and risks**	**Risk mitigation**	**Information in the source specifically relevant to Newtown Bank's problem, goals, and requirements**	**Page no. and quotes**
Sia, S. K., Soh, C., & Weill, P. (2016).	Leadership: The senior management team	Aligning the necessary	Top management leadership is not so good.	CEOs need to be transparent, adaptive and	**Related problems:** The digital business strategy cannot be conceived independently of the business	p.106, "need to develop several

	must be "ambidextrous," able to understand the potential and challenges of digitalization and have a shared vision of digitalization being central to the growth of the business.	investment in resources.		resilient, and senior executives must acquire new competencies	ecosystem when we use it in Newtown bank case. **Related goals:** Newtown banks need to be prepared to continuously navigate the dynamic and emerging digital landscape. **Related requirements:** Newtown banks need to quickly know more about disruptive innovations that are likely to occur and devise strategic responses to cope with dynamic shifts, which is related with requirements 5,6,7.	related capabilities"
Sia, S. K., Soh, C., & Weill, P. (2016).	Customer needs: Deeper analysis of the new value propositions to customers in the digitally enabled context is required.	Greater accessibility, higher affordability and wider social connectivity.		This requires the digitalization of products, services and customer relationships, and the seamless integration of functional silos across the enterprise.	**Related problems:** Newtown banks should dig deeper about customer needs in banking system. **Related requirements:** Newtown banks need to quickly use digital tools to predict customer needs in bank services.	p.106, "need to develop several related capabilities"
Basias, N., Themistocleous, M., & Morabito, V. (2015).	SOA planning: The second stage involve a detailed planning phase that involves: (a) project plan, (b) resource plan, (c) financial plan, (d) quality plan, (e) risk plan, (f) acceptance plan and (g) communications plan.		Implementation cannot follow the SOA planning.		**Related problems:** Newtown banks should follow the SOA planning step by step. **Related goals:** All processes are well completed. **Related requirements:** Related with requirements 5,6,7.	p.49, "SOA planning is"
Annamalai, C., & Ramani, A. (2015)	Service Oriented Architecture/Service	Can collaborate third party vendors to	there is still a lack of empirical evidence for factors		**Related problems:** The main barrier is finding customers with right skills and lack of SOA governance.	p.24, "SOEA is essential

	Oriented Enterprise Architecture (SOEA): SOEA is essential, in particular for implementing BIG DATA systems such as Cloud ERP because the firm needs to collaborate third party vendors to create customer value, maximize the profit and explore new business ventures with other multinational organizations globally.	create customer value, maximize the profit and explore new business ventures with other multinational organizations.	implementing BIG DATA systems such as cloud ERP (CERP).		**Related goals:** Improving business processes in an integrated environment within and outside the organization. **Related requirements:** Related with requirements 5,6,7.	”
Annamalai, C., & Ramani, A. (2015)	SOA Governance: SOA governance is just how a service can be shared according to the set of rules and policies which is applicable to all of the stake holders and in turn improve the business processes in an organization.				**Related problems:** The main barrier is finding people with right skills and lack of SOA governance. **Related goals:** Improving business processes in an integrated environment within and outside the organization.	

Teixeira, M., Ribeiro, R., Oliveira, C., & Massa, R. (2015).	Generalized Stochastic Petri Nets(GSPN): to analyze resource consumption and service levels degradation in SOA-based systems with different workloads and orchestration models.				**Related requirements:** Related with requirement 3,4,5.	p.5377, "the Generalized Stochastic Petri Nets (GSPNs) "
Teixeira, M., Ribeiro, R., Oliveira, C., & Massa, R. (2015).	Quality of Services (QoS): The status of a business and on the relationship between service customers and providers.				**Related requirements:** Related with requirement 3,5.	p.5366, "the Quality of Services (QoS) "
Teixeira, M., Ribeiro, R., Oliveira, C., & Massa, R. (2015).	Service-oriented architecture (SOA): SOA is a paradigm for software development based on the concept of service.		Improves efficiency and reduces operating costs by promoting a faster flow of information throughout banks and optimizes the business processes and adds corporate business value.		**Related requirements:** Related with requirement 3, helping in explaining what is SOA.	p.5366, "Service-Oriented Architecture (SOA)"

3. Glossary

Term	Definitions/explanations
Leadership	The senior management team must be "ambidextrous," able to understand the potential and challenges of digitalization and have a shared vision of digitalization being central to the growth of the business. (Sia, S. K., Soh, C., & Weill, P. , 2016)
Customer needs	Deeper analysis of the new value propositions to customers in the digitally enabled context is required. (Sia, S. K., Soh, C., & Weill, P. , 2016)

Generalized Stochastic Petri Nets(GSPN)	To analyze resource consumption and service levels degradation in SOA-based systems with different workloads and orchestration models. (Marsan, Balbo, & Conte, 1984; Marsan, Balbo, & Conte, 1995)
SOA planning	The second stage involve a detailed planning phase that involves: (a) project plan, (b) resource plan, (c) financial plan, (d) quality plan, (e) risk plan, (f) acceptance plan and (g) communications plan. (Basias, N., Themistocleous, M., & Morabito, V. , 2015).
Service Oriented Architecture/Service Oriented Enterprise Architecture (SOEA)	SOEA is essential, in particular for implementing BIG DATA systems such as Cloud ERP because the firm needs to collaborate third party vendors to create customer value, maximize the profit and explore new business ventures with other multinational organizations globally. (Bakar et al , 2013)
SOA Governance	SOA governance is just how a service can be shared according to the set of rules and policies which is applicable to all of the stake holders and in turn improve the business processes in an organization. (Annamalai, C., & Ramani, A. , 2015)
Quality of Services (QoS)	The status of a business and on the relationship between service customers and providers. (Teixeira, M., Ribeiro, R., Oliveira, C., & Massa, R. , 2015)
Service-oriented architecture (SOA)	SOA is a paradigm for software development based on the concept of service. (Teixeira, M., Ribeiro, R., Oliveira, C., & Massa, R. , 2015)

4. Bibliography

[1] Sia, S. K., Soh, C., & Weill, P. (2016). How DBS Bank Pursued a Digital Business Strategy. *MIS Quarterly Executive*, *15*(2).

[2] Basias, N., Themistocleous, M., & Morabito, V. (2015). A Decision making framework for SOA adoption in e-Banking: A case study approach. *Journal of Economics, Business and Management*, *3*(1), 48-53.

[3] Annamalai, C., & Ramani, A. (2015). Critical Success Factors (CSFs) of Service-Oriented Architecture (SOA) in BIG DATA Systems. *Governance*, *3*(3), 23-27.

[4] Teixeira, M., Ribeiro, R., Oliveira, C., & Massa, R. (2015). A quality-driven approach for resources planning in Service-Oriented Architectures. *Expert Systems with Applications*, *42*(12), 5366-5379.

5. Reflection

Joys: Through studying so many interesting and persuasive papers of banking industry in IT perspective, particularly in SOA discussion, I felt so proud of myself.

Frustrations: I am not satisfied with the one article I chose because I found it was too hard to gather relevant information about our topic;

Learnings: The four papers I read help me get better understand the concept of SOA and the core problems of my client, Newtown Bank, as well as the importance of introducing SOA to their business, which shows me a clear direction of my later research on this topic.

Questions/Comments: I still have many questions about other two specializing topics and how to integrate other aspects.