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Department of Computing and Information Systems

Individual Assignment Cover Sheet

Student Number and Name: 903588 Tiange Wang

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Assignment Title: **Assignment A01**

Tutor/Instructor Name: Malcolm Bertoni

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Before submitting my assignment, I have:

1. Made a copy of the assignment and of any material submitted with the assignment

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Signed: | Tiange Wang | **Date:** | 9, September, 2018

IT INFRASTRUCTURE EVALUATION REPORT

[TIANGE WANG 903588]
[30/08/2018]

Report Prepared for Assignment A01

ISYS90048 Managing ICT Infrastructure

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1. Introduction

The purposes of the report are to evaluate the Lincolnshire Partnership NHS information Management & Technology Strategy 2015-2020 and offer some proper recommendations in terms of the revision of the strategic plan. The scope of the report only contains details of the Lincolnshire Partnership NHS information Management & Technology Strategy 2015-2020 and primarily focuses on the performance of the accomplishment of IGT and process of becoming the part of 'digital revolution'.

The report displays the evaluation and recommendations to the Lincolnshire Partnership NHS Foundation Trust (LPFT) directly. The assumption made in this report in which the information and current environment provided by the strategic plan is complete and accurate.

1.1 Report Objectives / Purpose

The objectives of the report are to analyse the primarily related content of the plan and evaluate the strategic plan through the ITIL framework in the analysis section. In the key findings and recommendations section, key findings will be recorded and identified. Meanwhile, based on the key findings, the recommendations that how to figure out the issues and potential risks will be suggested in that section.

2. Background / Current Situation

The Lincolnshire Partnership NHS Foundation Trust was established in June 2002. It is a foundation trust to provide services to Lincolnshire, England, including Adult Community and Inpatient Mental Health Services, Specialist services, Older Adult services and Occupational therapy service (LPFT NHS, 2018).

The vision of the Trust is to encourage people to live well in their communities, completing Information governance tools (IGT) to assess the implementation of Information governance (IG), including data security, resilience and protection. The IMT (Information management and technology) strategy of the Trust expects patients and medical workers to use and access information online, book and change appointments, and access their care records in the future (Lpft.nhs.uk, 2018).

For the local context aspect, the Trust has reinforced the status as a Foundation Trust and is actively innovating to provide more services. Meanwhile, the organisational structure of Lincolnshire has also changed, including the decline of the Primary Care Trust (PCT) and the appearance of the Clinical Commissioning Group (CCG). Moreover, the health and social care community in Lincolnshire has an increasing demand for services provided by Trust (Lpft.nhs.uk, 2018).

However, for LPFT, it should face and overcome some challenges in the current situation and environment. First, Lincolnshire is densely populated but lacks high-quality web services. Next, IMT raises high requirements on the quality and integrity of data, communication and information sharing between stakeholders, system compatibility and interoperability. Lastly, the free period for Microsoft's packages has expired, with the risk of server ageing and the imminent expiration of software licenses (Lpft.nhs.uk, 2018).

3. Analysis

The report assesses the Lincolnshire Partnership NHS information Management & Technology Strategic Plan through ITIL. Table 1 lists the initial analysis of the strategic plan. Then the results of the analysis will be applied to identify the key findings presented in Table 2. Finally, a series of recommendations are raised to strengthen the strategic plan.

The ITIL was developed by the Central Computing and Telecommunications Agency (CCTA) in the late 1980s, which is applied to IT Service Management (ITSM). It provides an objective, rigorous, and quantifiable standard for the IT service management of the enterprise. It contains five core publications: Service Strategy, Service Design, Service Transition, Service Operations, and Continual Service Improvement (En.wikipedia.org, 2018). The first two stages align with the demands of the LPFT's strategic plan and are able to provide guidance for it. Hence, the ITIL can be seen as the most suitable IT governance framework for the LPFT.

Guidelines	Evidence	Findings
A. Management of service level agreements for information governance services		
A1. Service Portfolio Management The Lincolnshire Partnership NHS Foundation Trust should manage the portfolio of all IT services to ensure that the delivered services correspond to the strategic goals.	Section 3, P12 • "Clinical Priority 2 – Lead on service integration" • "Take a leading role in the development of IT integration." • "Lead the development of a county wide health and social care IM&T delivery plan" Section 3, P14 • "Create a care portal environment to integrate systems to provide a summary record for operational/clinical staff to access on and off-line."	F1. Services, development of IT and development of health and social care are integrated. **(Conforms)**
A2. Demand Management The Lincolnshire Partnership NHS Foundation Trust should understand the customer's demands and balance it with the	No evidence.	F2. The Lincolnshire Partnership NHS Foundation Trust does not mention capacity of the system and the plan. So the method of balancing is not achieved. And it

capacity, availability and services offered, and evaluate customer demands based on the services provided.		provides communication channel with stakeholders to collect information but does not provide evaluation methods. **(Does not conform)**
A3. Strategy Management for IT Services The Lincolnshire Partnership NHS Foundation Trust should evaluate the capability of IT services in the market and engage in strategy management, including analysing the market, reviewing current customer demands and planning for potential expansion of market.	Section 3, P16 • "To provide a means of collecting views and feedback from all key stakeholders on issues relating to the Trust." • "Development of a new website to promote greater service user and carer involvement with the ability to be able to communicate more effectively with staff and other users through the use of instant messaging and chat." • "To provide a platform for regular feedback to service users and carers on the actions the Trust has taken and in relation to feedback that has been provided."	F3. The Trust provides the methods to collect feedbacks and issues from stakeholders. It also develops a new website and a platform for stakeholders to participate which could be used to analyse the market. However, it does not describe a detailed plan about how to expand the potential market. **(Partially conform)**
A4. Business Relationship Management The Lincolnshire Partnership NHS Foundation Trust should create and maintain customer relationships, understand customers' requirements and offer services that satisfy those needs.	Section 3, P11 & P12 • "Use technologies to collect feedback and ideas." • "Provide ways to communicate through different mediums such as web portal, social media and video conferencing." • "Provide solutions to collect data and information to support quality and innovation and demonstrate outcomes." • "Develop a service user portal to allow greater involvement in individual and communication with service provider." Section 3, P15 • "Ensuring that there is a fit for purpose technology support service to front line staff that meets their needs."	F4. Customers' relationships and requirements are maintained and collected through some technologies and some communication channels, such as web portal, social media and video conferencing. The plan also provides some services to meet the requirements. **(Conforms)**

A5. Service Level Management The Lincolnshire Partnership NHS Foundation Trust should measure performance based on the planning and definition of the organisation service delivery aims.	Section 3, P14 • "Developing the right Data Quality systems to capture all the data we need to inform service line management." • "Develop the required performance management tools (balanced scorecards)."	F5. The Trust measures the performance through some methods. **(Conforms)**
A6. Availability Management The Lincolnshire Partnership NHS Foundation Trust should ensure that services maintain the circumstance of availability.	Section 3, P12 • "Use contact centre and communications technologies to create a single referral hub to improve ease and speed of access." • "Provide different technological solutions to allow the sharing and collecting of information." • "Provide a means for turning data into intelligence to support community health surveillance and 7 day working." • "Use technology to support mobile and integrated working and collaboration across clinical departments and communities." Section 3, P15 • "Create monitoring reports that are detailed and provide an early warning system."	F6. The Trust utilise a series of monitoring reports, solutions, technologies and systems guarantee services are always available to customers. **(Conforms)**
A7. Capacity Management The Lincolnshire Partnership NHS Foundation Trust should always maintain the sufficient capacity to support the operations of business requirements.	No evidence.	F7. The Trust does not provide any plans to demonstrate the capacity and relevant content. **(Does not conform)**
A8. Service Catalogue Management The Lincolnshire Partnership NHS Foundation Trust should	Section 3, P12 • "Use contact centre and communications technologies to create a single referral hub to	F8. The Trust maintain the accessibility of the system and services through some methods, including creating

guarantee that it exists some available update services catalogue and maintain the accessibility of the services	improve ease and speed of access.” • “Provide different technological solutions to allow the sharing and collecting of information.” • “Provide a means for turning data into intelligence to support community health surveillance and 7 day working.” • “Use technology to support mobile and integrated working and collaboration across clinical departments and communities.” Section 3, P13 • “Provide enterprise solutions for connectivity and communications.” Section 3, P14 • “Provide mediums for communication across and between the Managed Care Network.” • “Further develop solutions for mobile and flexible working to allow staff to access systems and information whilst on the move”	single hub, different solutions monitoring and providing mediums. Nonetheless, it does not mention the available update services catalogue. **(Partially conform)**
A9. Design Coordination The Lincolnshire Partnership NHS Foundation Trust should check the availability of the resource and service requirements to determine whether the design is optimal and effective.	Section 3, P17 • “To provide compliance reports for staff and managers to support continuous improvement.” • “The analysis of information will allow lessons to be learned and highlight areas of good and poor practice which will support continuous improvement going forward.”	F9. The Trust provides reports to employees and managers and capture experiences from the analysis of information to improve continuously. **(Conforms)**
B. Management of data quality		
B1. Availability Management The Lincolnshire Partnership NHS Foundation Trust should ensure that the availability of	Section 3, P12 • “Provide solutions to collect data and information to support quality and innovation and demonstrate	F10. In data quality part, the Trust guarantees the smooth operation of the services.

services in data quality aspect.	outcomes."	(Conforms)
	Section 3, P13 • "Provide data and information solutions to support research." • "Identify data flow requirements and solutions to support care." Section 3, P14 • "Developing the right Data Quality systems to capture all the data we need to inform service line management." Section 3, P15 • "To support the need to collect incident related data with the ability to feed this information back in a useable format to ensure lessons are learned." • "Access to data and information to support research with the sharing of benchmarking data to support the development of quality care and service provision processes."	
B2. Information Security Management The Lincolnshire Partnership NHS Foundation Trust should detect, restrict, and restraint unauthorised access, improving the level of protection for systems, data, and people using systems and data.	Section 3, P13 • "Provide solutions for the safe storage and transfer of data and information in support of research."	F11. The Trust offers solutions in data storage and transfer which reinforce the security level. However, it does not illustrate methods of protecting staff who using data and access control. (Partially Conform)
B3. Knowledge Management The Lincolnshire Partnership NHS Foundation Trust should train and improve the level of technicians and accumulate useful knowledge for them and their customers to use when solving problems.	Section 3, P15 • "Ensuring that staff understand their responsibilities in respect of data quality, information governance and data completeness through access to focussed and targeted training and awareness raising."	F12. The Trust identifies the role of customers, guides and trains them to improve the skill through different aspects, tools and systems. (Conforms)

	Section 3, P16 • "Providing staff with the technology and training to do their work more efficiently and effectively and supporting the way services need to operate." Section 3, P17 • "Technology will support decision making with decision support tools and by also guiding staff through pathways of care. It will also prompt staff to take particular action when certain decisions have to be made."	
C. Procurement of ICT services and ICT infrastructure		
C1. Financial Management The Lincolnshire Partnership NHS Foundation Trust should count the financial expenditure which contains the budget, accounting and the spending of business activities.	Appendix, P25 & Section 4, P18 • "The focus was on infrastructure, corporate and clinical systems, communications and governance with much being achieved over this period (see appendix 1). However there have been a number of actions that were planned but have not been delivered to date caused by issues including, capacity, funding or fit for purpose solutions. There has also been a number of higher level additional actions that have been identified over the period of the Strategy that need to feed into the Trust's plans going forward (see appendix 1). "	F13. The plan indicated that the Trust has procured some ICT infrastructures and obtained achievements. However, there are some actions, even higher level actions, planned but never delivered. **(Partially conform)**
D. Conformance with an ICT governance framework		
D1. Continuity Management The Lincolnshire Partnership NHS Foundation Trust should proceed the risk management to guarantee the continuity of the business.	Section 3, P13 • "Provide solutions to support the early detection of risk." Section 3, P17 • "Systems will also collect data that can be turned into	F14. The Trust set some methods to detect the risk and design the system to mitigate risk which ensure the continuity of the entire system to some degrees. However, it lacks the process of identification of risks and

	information and intelligence to support learning and mitigate risk."	'solutions' are not specific. **(Partially Conform)**
D2. Supplier Management The Lincolnshire Partnership NHS Foundation Trust should monitor all suppliers and their relationships to check whether the participants are in compliance with the contracts and agreements.	No evidence	F15. The Trust does not deploy similar managements to monitor and inspect their suppliers. **(Does not conform)**

Table 1. The table of analysis through ITIL framework.

4. Key Findings and Recommendations

In the section 4.1, it illustrates the primary conclusions from the analysis in section 3. Then in the section 4.2, it provides some recommendations regarding the shortages of the strategic plan in section 4.1.

4.1 Key Findings

Key Findings No.	Key Findings	Reference (from Table 1.)	Justification
KF1.	The strategic plan was designed and established well and satisfies with the aim of the Lincolnshire Partnership NHS Foundation Trust basically.	F1, F3, F4, F5, F6, F8, F9, F10, F11, F12, F13.	The Trust establishes many actions, including integrating services, collecting feedback, maintaining the customers' relationships, measuring performance, monitoring the accessibility of the system to ensure the operations and training staff, which align with the objective of the LPFT.
KF2.	The data quality and services are guaranteed.	F8, F10, F11.	The Trust establishes the special data quality system, deploys the monitoring system in different aspects and provides the detection of risks, which enhance the availability of the system and the security level.
KF3.	The Lincolnshire Partnership NHS Foundation Trust attach importance to stakeholders and is close to them.	F3, F4, F5, F6, F9.	The Trust could obtain feedbacks from multiple channels. It also provides various communication ways and performance assessment to stakeholders. For potential risks and issues, it offers many

			solutions. Meanwhile, it trains and monitors staff from different aspects and provides monitoring report.
KF4.	The analysis of the environment and requirement of ICT is not thorough.	F3, F8, F13.	Some premium actions are planned but not delivered. The plan also does not cover the list of update services and the methods for the expansion of potential market.
KF5.	The Lincolnshire Partnership NHS Foundation Trust lack the capacity and related management.	F2, F7.	There are no obvious plans on describing the capacity of the system and the methods to evaluate the stakeholders. Thus, the demand and capacity management are not able to process.
KF6.	The Lincolnshire Partnership NHS Foundation Trust lack the sufficient risk management.	F14.	Although the Trust provides some methods to detect risks, the identification and settlement of the risks are vague to some degrees.
KF7.	The Lincolnshire Partnership NHS Foundation Trust lack the supplier management and the summary of suppliers relationship.	F15.	There are no obvious evidences that demonstrate suppliers and their relationships.

Table 2. The table of Key Findings.

4.2 Recommendations

Recommendations No.	Recommendations	Reference (from Table 2.)	Justification
R1.	It is recommended that the Lincolnshire Partnership NHS Foundation Trust should proceed more thorough analysis of environment and requirement in order to provide more accurate services to stakeholders and reasonable budget of operations.	KF4.	"The objective of Strategy Management for IT Services is to assess the service provider's offerings, capabilities, competitors as well as current and potential market spaces in order to develop a strategy to serve customers." (IT Process Wiki - the ITIL® Wiki, 2018) "The purpose of service catalogue management is to create and maintain a service catalogue of all services currently delivered or ready to be delivered by the IT service provider. Service catalogue management must ensure that

			the service catalogue meets the agreed functionality, usability, accessibility, availability and performance requirements of all those who need to use it. The aim of financial management for IT services is to ensure that optimal use is made of the organisation's financial resources and aligns with the regulatory framework within which the IT service provider operates." (Brewster et al., 2012)
R2.	It is recommended that the Lincolnshire Partnership NHS Foundation Trust should manage the capacity of the system and develop methods to evaluate the stakeholders in order to balance the demand with the capacity, availability and services provided.	KF5.	"As a service provider, IT is responsible for providing just enough capacity for services to meet their agreed service levels. Demand management requires to understand and influence customer demand for services in order to support the provision and management of minimum capacity to meet these demands. Demand management is a key contributor to capacity management because it helps understand the nature of demand on resources and can reduce the capacity requirements by smoothing out peaks in demand." (Brewster et al., 2012)
R3.	It is recommended that the Lincolnshire Partnership NHS Foundation Trust should provide identification of risks and specific solutions to resolve or avoid each risk. In addition, these two processes should be interacted with the existing risk detection system.	KF6.	Risk management is a key activity of the continuity management. "Most organisations' dependency on their IT systems is such that the loss of key applications or infrastructure could cause the company to fail within days if not earlier. Because of this, organisations need to plan how they will recover their key systems within an appropriate timescale in the event of a failure. Organisations can suffer from the loss of systems other than IT systems and should have a general business continuity plan that protects against any

			eventuality that could threaten its vital business functions (VBFs). The purpose of continuity management is to support business continuity management by ensuring that the IT resources, systems and services can be reinstated within agreed timescales in the event of a major incident. This is achieved by creating and maintaining the necessary facilities and recovery capabilities." (Brewster et al., 2012)
R4.	It is recommended that the Lincolnshire Partnership NHS Foundation Trust should process the management of suppliers and figure out the relationship between them in order to address the lack of the supplier management and optimise the interactions and communications between suppliers.	KF7.	"Supplier management is about negotiating contracts that are consistent with the needs of the business and that support the achievement of targets in the relevant SLAs. It is also about managing the longer-term relationship with suppliers and their continuing performance. It requires positive management throughout the contract lifecycle, monitoring delivery and performance to identify and deal with issues and potential problems before they occur. This approach generally has more potential for generating value in the relationship than the traditional confrontational approach, as the supplier becomes more involved in helping the IT service provider to deliver benefit to the business." (Brewster et al., 2012)

Table 3. The table of recommendations.

References

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