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Knowledge Management Function Design in PT X*

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ABSTRACT

The purpose of this research is to provide understanding of knowledge management function in PT X for technical account managers in premier delivery, improving business processes, pooling redundant tasks and simplifying onboarding processes. The analysis and modelling method used was in accordance with ITIL v3 (2011), one of the most widely used IT management tools. It was found that employees experiencing work overload can benefit greatly from the establishment of knowledge management. Previously, there was limited knowledge management in PT X, and also, it was not specific to the needs of PT X. Expected results of this research were a change in process and establishment of a new function within PT X. This project will benefit users in improving processes, gathering and distributing knowledge and offloading some amount of workload experienced by technical account managers in PT X by using knowledge management.

Keywords: Knowledge management, services, delivery, ITIL

INTRODUCTION

PT X Premier Support helps organisations maximise value from IT investments through lower costs, risk and downtime and improved technology adoption, IT department capabilities and end-user productivity. These benefits are delivered 24/7 from a designated team of PT X's top subject-matter experts. The designated team helps organisations with a wide range of needs including urgent break-fix scenarios, system security, forward-looking risk assessments and holistic, multi-year IT plans designed to optimise people, processes and technology.

Premier is an end-to-end IT support and service offered by PT X. Premier Support provides service management

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through a technical account manager (TAM) from PT X, proactive services and resolution services. The Premier delivery team comprises a support practice manager (SPM) and technical account managers (TAM). At the moment there is a diffusion of knowledge among TAMs, and with all of the tools that TAMs use, it becomes harder and harder to monitor delivery as the Premier business grows. This issue of scattered information is one of the biggest factors that is causing workload overload for TAMs. Typically, a TAM is expected to work around 70-80% of his work time, but currently, this can go as high as 150%.

This demands a knowledge management function in which knowledge of Premier is pooled together, and reports for monitoring purposes are able to be generated periodically. This enhances the decision making power of the support practice manager and the services director. The knowledge management function serves as a pool of knowledge in which information and knowledge are easily obtained.

This function also serves as support for future growth and is easier onboarding for new staff attached to the Premier team. According to Tounkara (2013), knowledge transfer is a real challenge for organisations. A knowledge management function should, therefore, be able to help mediate this problem.

Premier offers open workshops to all Premier customers. These open workshops are currently handled by one TAM, but with the growing number of customers and workload, there have been hold-ups and delays in the workshop management process. The knowledge management function can also help solve this problem. Workshop knowledge can be centred in the knowledge management function and be easily distributed to TAMs and customers.

According to Edwards (2011), although knowledge management (KM) should focus on people, processes and technology, organisations often put too much emphasis on people and/or technology to the exclusion of the process factor. This causes a risky initiative implementation, which is why thinking about process can improve general knowledge management.

METHODOLOGY

The main methodology used in this research comprised three main methods, which were:

Process Design Methodology

The knowledge management model that was used is in accordance with Information Technology Infrastructure Library (ITIL) v3 which was published in 2011. The knowledge management methodology is described briefly in "The Official Introduction to the ITIL Service Lifecycle" and described more in depth in the book "Service Transition". Both books were published by the Office of Government Commerce (OGC). According to the "Service Transition", there are three core parts to knowledge management, which are:

- Knowledge Management Strategy
- Data and Information Management
- Key Performance Indicators (KPIs) and Metrics

The history of ITIL is described in the book, "Introduction to ITIL Service Lifecycle". As technology develops and its use proliferates organisations, Information Technology Service Management (ITSM) evolves and gains more attention. In the 1980s, the United Kingdom government, in an effort towards efficiency, started documenting how the best organisations approached service management. The result of this effort was the early versions of IT Infrastructure Library (ITIL), which compiled a series of books that document how IT service management supports business users. Although it was started as a library of over 40 books, today, ITIL is in its third version and is compacted into five core publications:

1. ITIL Service Strategy
2. ITIL Service Design
3. ITIL Service Transition
4. ITIL Service Operation
5. ITIL Continual Service Improvement

The five core publications each describe a part of the service lifecycle in ITIL. Now, ITIL is owned by the Office of Government Commerce (OGC), and the books are all published by The Stationery Office (TSO).

ITIL is not a 'how-to' manual nor is it a complete solution. Instead, it is a framework of practices that aim to deliver business value. The key characteristics of ITIL are:

- Non-proprietary – ITIL service management is applicable to any organisations because it is not based on any specific technology or platform. It is also not tied to an industry.
- Non-prescriptive – ITIL provides robust, time-tested and mature practices applicable to all types of service organisations in both private and public sectors, all sizes, internal and external, and in any technical environment.
- Best practice – ITIL represents learning experiences and thought leadership of the worlds' best service organisations.

ITIL Service Lifecycle and Processes

The processes involved in the ITIL service lifecycle are divided into five main processes and 26 processes:

- Service Strategy (SST) – This is the core of the service lifecycle. Service strategy guides organisations in viewing service management as a strategic asset. Here, organisations develop objectives, performance standards and define the business value that is needed from services. The processes involved with service strategy are:
- Business Relationship Management – the process that is responsible for managing and maintaining relationship with business stakeholders. This involves:
- Managing relationships with business stakeholders
- Providing input to the service portfolio management from business stakeholders
- Ensuring that the business needs of the business stakeholders are fulfilled by the IT service provider
- Demand management – the process that is responsible for understanding

and influencing business users' demand for IT service and providing IT service capacity to meet those demands. This can involve analysis of patterns of business activities, user profiles, peak times etc.

- Financial Management for IT Services – the process that is responsible for managing the finances of IT services, including budgeting, accounting and charging
- Service Portfolio Management – the process to manage the service portfolio of the IT service provider
- Strategy Management – the process to manage the strategy of the IT service provider
- Service Design (SDE) – Turning service strategy to a blueprint to deliver objectives and values. Designing and developing the services is done here, along with maintaining the services catalogue and portfolio. The processes involved in service design are:
- Availability Management – the process to ensure that the level of service availability delivered in all IT services matches or exceeds the agreed upon level of business needs
- Capacity Management – the process to ensure that the IT service provider capacity is available in all areas of IT in a cost-justifiable manner
- Information Security Management – the process to align IT security with business security and ensure that information security is effectively managed in all its service and service management capabilities
- IT Service Continuity Management – the process to ensure that the required IT capabilities can be resumed within the required and agreed upon business timeframe if unpredicted incidents occur
- Service Catalogue Management – the process to provide a single source of information of all agreed upon services, and ensure that this information is made readily available to everyone who is approved to access it
- Service Level Management – the process to ensure that an agreed level of IT service is provided for all current IT services and that future services are delivered to agreed achievable targets. This process involves negotiating, agreeing and documenting appropriate IT service targets with business stakeholder representatives; it also monitors and produces reports on the IT service provider's ability to meet the agreed upon IT service targets.
- Supplier Management – the process to manage suppliers and the services they supply
- Service Transition (STR) – Guiding transitioning new and changed services to live operations. The processes involved with Service Transition are:
- Change Management – the process to ensure that all changes are recorded, evaluated, authorised, prioritised, planned, tested, implemented,

documented and reviewed in a controlled manner.

- Evaluation – the process that considers whether the performance of a service is acceptable and whether the performance justifies the cost. This continues with approval, rejection etc.
- Knowledge Management – the process to ensure that right information is delivered to the appropriate person to enable informed decisions to be made. With knowledge management, organisations are enabled to improve the quality of the management decision-making process by ensuring the availability of reliable and secure data and information throughout the service lifecycle.
- Release and Deployment Management – process to deploy service releases to production and to establish effective use of the service to extract the maximum value to the customer and to be handed over to service operations.
- Service Asset and Configuration Management (SACM) – the process to define and control components of the service infrastructure and to maintain accurate configuration of services and assets (historical, planned and current state)
- Service Validation and Testing – the process to ensure that a service will provide value to customers and the business. The concept in this process is quality assurance. Without sufficient testing in the quality assurance process, there can be a rise in incidents when the service is put to use in production.
- Transition Planning and Support – the process to plan the appropriate capacity and resources to build, release, test, deploy, package a release and establish the new or changed service to production. The goal of this process is to ensure that a new or changed service is established to production within the predicted cost, quality and time estimates.
- Service Operation (SOP) – embodies day-to-day practices of services. In service operation, the value of services is shown, making this a critical capability. Service operation guides organisations in achieving effectiveness and efficiency in delivering services. The components in service operation are:
- Processes:
- Access Management – the process to grant authorised users access to a service, while restricting access to all unauthorised users
- Event Management – the process that monitors all events that occur during the service operations throughout the IT infrastructure. When there are exceptions, the process defined here should be able to detect and escalate them to incident or problem management.
- Incident Management – the process to quickly restore unexpected degradation or disruption to service operations in order to minimise business impact.

Incident management is the short-term solution that seeks to find a quick fix to quality disruption/degradation.

- Problem Management – the process to analyse the root cause of incidents, to do proactive activities in order to prevent future incidents and to manage a known error database that allows quicker diagnosis and resolution if future incidents occur. An incident is called a problem when it has happened more than once. Problem management is the long-term solution that takes more time than incident management, but finds the root cause and fixes it.
- Request Fulfilment – the process dealing with fulfilling service requests (changes that are requested to the Service Desk regarding IT services). Whenever necessary, the request is connected to a previous incident/problem that may have triggered the request.
- Functions (groups of people who use processes to match the IT infrastructure capability to the business need):
- Application Management – the team that manages the applications throughout their lifecycle. Applications are defined as the software/system that is implemented to support the business process of the users.
- IT Operations Management – the team that executes the day-to-day operational activities needed to manage the IT infrastructure. They follow the performance standards that were defined during the service design stage of the service lifecycle.
- Service Desk – the primary point of contact for all users. Service Desk handles services requests, service disruption and requests for changes. They provide a point of communication for users and coordination for the IT groups and processes.
- Technical Management – the team that provides the resources and technical expertise to support ongoing IT operations
- Continual Service Improvement (CSI) – this system guides the organisation in creating and maintaining value to service customers through better design, transition and operation of services. The process involved with Continual Service Improvement is:
- The 7-Step Improvement Process (see Figure 2)
- Define what to measure

  This activity defines where the organisation is currently at in terms of IT infrastructure maturity. The team decides on the metrics that should be measured to assess the quality/ performance of the IT service.
- Define what you can measure

  This activity is related to defining where the organisation wants to be in terms of IT infrastructure maturity. The team identifies the new service level requirements of the business, the IT capabilities and the budget.

- Gather the data

  Based on the goals and objectives that have been identified, raw data are gathered. This activity also defines who has the data, how the data should be gathered and when the data should be gathered. Integrity of the data must also be ensured to avoid false data.

- Process the data

  The activity to process data from multiple disparate sources into a similar format so the data can be compared

- Analyse the data

  In this activity, the data becomes information after analysis that identifies service gaps, impact on business and service trends

- Present and use the information

  This activity displays accurate representation of the results of the improvement efforts to various stakeholders. Knowledge from the information is presented to the business to assist them in determining the next steps.

- Implement corrective action

  Knowledge that is gained from the previous activity is used to optimise, improve and correct services. The managers identify the issues and present solutions at this stage. Then, corrective actions are communicated and explained to the entire organisation. After this step, the organisation establishes a new baseline, and the CSI cycle can start again.

Knowledge management (KM) is a deliberate, systematic business optimisation strategy that selects, distills, stores, organises, packages and communicates information essential to the business of a company in a manner that improves employee performance and corporate competitiveness (Bergeron, 2003). In the book, "Knowledge Management in Theory and Practice", there are several more definitions of knowledge management based on different perspectives (Dalkir, 2005).

The perspectives that are explored are:

Business Perspective

Knowledge management is a business activity with two primary aspects: Treating the knowledge component of business activities as an explicit concern of business reflected in strategy, policy and practice at all levels of the organization; and, making a direct connection between an organisation's intellectual assets, both explicit (recorded) and tacit (personal know-how), and positive business results. (Barclay & Murray, 1997). Knowledge management is a collaborative and integrated approach to the creation, capture, organisation, access and use of an enterprise's intellectual assets (Grey, 1996).

Cognitive Science Perspective

Knowledge i.e. the insights, understanding and practical know-how that we all possess, is the fundamental resource that allows us to function intelligently. Over time, considerable knowledge is also transformed to other manifestations such as books,

technology, practices and traditions within organisations of all kinds and in society in general. These transformations result in cumulated expertise and, when used appropriately, increases effectiveness. Knowledge is a, if not the, principal factor that makes personal, organisational and societal intelligent behaviour possible (Wiig, 1993, pp. 38–39).

Process/Technology Perspective

Knowledge management is the concept by which information is turned into actionable knowledge and made available effortlessly in usable form to the people who can apply it.

Data Gathering Methodology

The data in this research was gathered as primary data and secondary data. Primarily, data that were related to the process were gathered through interviews with PT X employees. Secondary data were gathered through reviewing internal data and presentation.

SharePoint Design

The SharePoint was designed according to the basic structure described by PT X.

RESULTS AND DISCUSSION

Based on the case studies and the issues affecting Premier Support Delivery, it was proposed to establish a knowledge management function named Indonesia Services Center to handle several functions. Instead of Premier Service Center, based on discussion with the Services Director and Support Practice Manager of PT X Indonesia, it was decided that in the future, the Services Center would extend its services to PT X Consulting Services. Thus, to reflect the future needs of the business, the name of the function was changed to Indonesia Services Center (ISC).

Service Strategy

Governance model. As the ISC focusses on Premier Support Delivery to begin with, the ISC organisation falls under the responsibility of the SPM. An ISC Lead is appointed, along with a number of ISC staff. The ISC is monitored by the SPM and Services Director.

The ISC process must be transparent to everyone on the Premier Support team (SPM, TAM, PFE and Sales) and a review of the catalogue and quality of services is done every quarter of the fiscal year. In the event that the strategy and process have to be changed, the change to the strategy and to the ISC process will have to be approved by the SPM and Services Director before it can be implemented.

The governance model for the ISC is within the governance model of PT X as a whole. ISC is subject to regulations that were created by the compliance team of PT X that is also followed the PT X Worldwide compliance team. At the time of this research, there were no organisational changes underway that could significantly impact roles, responsibilities and processes in the Services division.

Roles and responsibilities. The roles and responsibilities of the stakeholders of ISC are:

- Services Director: Sponsor of the ISC. The Services Director is responsible for:
  - Providing input and feedback to the ISC strategy and processes
  - Approval of any strategy and process change within the ISC
  - Approval of hiring decisions
  - Conducting review of the ISC performance together with the SPM
  - the SPM
- The SPM: Manager of the Premier Delivery team as a whole, which manages the ISC and TAMs. The SPM is responsible for:
  - Providing input and feedback to the ISC strategy and processes
  - Approval of any strategy and process change within the ISC
  - Hiring of new staff
  - Conducting review of ISC performance together with the Services Director
  - Reporting problems to the correct personnel (This can be the product team, system developer team or other departments of PT X)
- ISC Lead: Manager of ISC staff. The ISC Lead is responsible for:
  - Leading the effort to establish and implement the ISC function
  - Proposing new and/or changed services
  - Managing ISC staff
  - Handling incidents that occurs in ISC operations
  - Escalating problems to the SPM
- ISC Staff: Responsible for delivering services that provided by ISC; they handle day-to-day requests from TAMs and customers. Whenever any incidents arise, ISC staff must report them to the ISC Lead.
- TAM: As ISC stakeholders, is responsible for providing input and feedback on ISC processes

Managing the knowledge. The knowledge possessed by ISC can be derived from sources inside PT X or from external sources. It can be generated either by the ISC itself or by adapting knowledge from external sources (both within and outside PT X).

Figure 1: Knowledge and information relationship in ISC

To assess what knowledge is needed, the decisions that are based on these data have to be specified. The knowledge management function provides the knowledge to support decision making of:

- Workshop pricing and scheduling
- Number of hours that Premier requires from PFE and CTS/GTSC to resolve problems
- Which TAM is best suited to handle a customer
- How Premier Delivery can be improved
- How TAMs can better serve the customer

Knowledge that can be generated includes:

- Workshop frequency and margin
- Trend of problem resolution cases
- What opportunities are available for every customer
- What the customer's preference is
- History of meetings and decisions within the Premier Delivery team

Knowledge gathered from outside sources include:

- PT X Internal
- Knowledge about Premier Support offerings
- Troubleshooting guide to offerings
- New offerings and announcements from the worldwide Services team
- New announcements from the product team
- PT X External
- Knowledge of training centre availability and capability
- Issues and concerns of customers

The knowledge will be made available online in the SharePoint site of PT Services Indonesia and can be accessed from outside the corporate Intranet.

Resources requirements. In the process of delivering services to stakeholders, ISC requires several resources requirements, which on the high level are:

- Staff to run the ISC
- Access to data and information from the corporate Intranet
- Approval and support to interview TAMs and SPM
- Sponsorship from PT X Services Indonesia for funds necessary for hiring and events executed by the ISC

Performance measures. To continually improve the ISC, a few performance measures are established, mainly:

- TAM satisfaction
- Efficiency of the ISC function
- Improvement to the Premier Delivery process

Service catalogue. This includes:

Workshop management. In the workshop process, the role of the WC TAM in open workshops is replaced by the ISC. The management of closed workshops is handled

by ISC. TAMs can submit a request for a closed workshop to ISC, along with the customer's name, date and topic requested. ISC then provides the resources and gives feedback on availability to the TAM.

Case management. The objectives of this are:

- To ensure the hygiene of open Problem Resolution Support incidents twice per week on an exception basis
- To ensure no incident sits idle for more than three days
- To ensure that incidents open for more than 30 days have an update
- To ensure that the SPM is aware of any incident where the hours charged are over a certain threshold by sending a summary report to the SPM.

The Service Centre Team will:

- Liaise via email (or phone if required) with the customer or MS engineer

The Service Center Team will not (unless agreed to in advance):

- Provide a full incident management service
- Update each individual incident

Customer profiling. The objective of profiling the customers is to provide the SPM with better knowledge of the customers' spread in different areas. The profiling is done based on data gathered from interviews with each TAM.

The Service Centre Team will:

- Interview TAMs for initial data collection
- Process and compile data from all customers

The Service Centre Team will not (unless agreed to in advance):

- Reach the customer for data collection

Knowledge repository. The objective of the knowledge repository is to provide a single knowledge database for all Premier Support team members. This repository was created based on SharePoint 2013.

The Service Centrer Team will:

- Maintain the SharePoint site
- Add, edit and change permissions to each customer's folder in accordance with account delegation by TAM

The Service Centre Team will not (unless agreed to in advance):

- Change the contents of any folder

Customer communications. The objectives of this are:

- To provide Premier announcements in a timely manner to all customers
- To provide effective communications with customers and to not overstep boundaries; the Service Centre Team will request TAMs to provide a list of their customers to whom emails can be sent regularly regarding updates and announcements.

The Service Centre Team will:

- Contact customers who are whitelisted
- Maintain a list of the whitelisted customers

SharePoint design. To accommodate the services in the catalogue, a SharePoint sub-site in the PT X Services Indonesia is created. From the options that are available, the Team Site option was chosen to best accommodate the requirements. These are the components of SharePoint:

1. Document libraries
    a. Open Workshop Schedule

        This document library holds all workshop schedules, revisions and workshop datasheets.

    b. Open Workshop Invitations

        This document library holds all invitations to workshop and services events that are customer-ready.

    c. TAM Resources

        This document library holds all resources that a TAM should have to do his or her job more efficiently.

    d. Customer Information

        This document library holds all documents pertaining to every customer. All customers are assigned their own separate folder, which is accessible only to the TAM who handles that customer, the ISC Lead, the SPM and the Services Director.

2. List
    a. Certificate Reprint Request – A list to register the names of workshop attendees who need their certificate to be reprinted

    b. Services Events Calendar – Calendar list to register all Services events.

    c. Performance Interview – Every quarter, the performance of ISC will be reviewed by the SPM and Services Director. Other than numbers viewed directly from the internal system, TAMs will be given a questionnaire and interviewed. The questionnaire questions are:

        1. How useful do you find the ISC SharePoint site? Please rate the usefulness between 1 and 5, with 1 as the least useful and 5 as the most useful.
        2. How useful do you find the workshop management by the ISC? Please rate the usefulness between 1 and 5, with 1 as the least useful and 5 as the most useful.
        3. How useful do you find the case wellness function by the ISC? Please rate the usefulness between 1 and 5, with 1 as the least useful and 5 as the most useful.
        4. How useful do you find the customer communications function by the ISC? Please rate

the usefulness between 1 and 5, with 1 as the least useful and 5 as the most useful.

The interview questions were:

1. What information do you need to be made available by the ISC?
2. What do you think can be improved in the ISC?
3. What services do you want to have made available from the ISC?

CONCLUSION

X Services Premier Support, as PT X's high-end service offering, helps organisations maximise value from IT investments through lower costs, risk and downtime and improved technology adoption, IT department capabilities and end-user productivity. These services are managed by a technical account manager (TAM) from PT X. These TAMs are the customer's single point of contact for all the customer's needs with PT X. However, with employee turnover and holidays/out-of-office days, it becomes a challenge to maintain information on customers. Leaving employees sometimes do not hand over their customer data to other employees. Moreover, as the Premier organisation grows and handles more customers, delivery needs to be monitored so as to maintain service speed and quality. In the process to solve the issues that emerge, Indonesia Services Center (ISC) was formed to handle knowledge management for the Services division of PT X Indonesia. In developing the ISC, case studies on other subsidiaries of PT X were done and keeping to their example, not only does ISC handle the SharePoint site, but also several other service catalogues.

Knowledge management software such as SharePoint 2013 is a tool that is convenient to implement and useful for knowledge management function. Notebook software such as OneNote 2013 and Evernote, is also an easy tool to use to share knowledge management in documents that can be edited concurrently by all team members.

In order to implement both of systems, an organisation needs to analyse the specific requirements for strategy, governance, data, information, knowledge, retention, roles and responsibilities as well as user rights within the organisation. After this information is captured, then an organisation can implement a KM software to accommodate knowledge management.

For future research into applications of knowledge management, the organisation for which the function will be implemented must be analysed carefully as knowledge management implementation is unique to every organisation. Initial knowledge management implementation does not have to be overly complicated as the organisation continues to learn to use knowledge management. However, in implementing knowledge management, the organisation must be willing to change, whether in organisational structure, employee skillsets, business processes or habits. Resources that maintain knowledge management must also be predicted in the analysis.

Risk management must also be considered as some information may be confidential. In the case of this research, PT X already implemented measures to manage risks. To simplify the sharing process, another system can also be set up to make the process of uploading to cloud easier rather than having to upload in the site directly.

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