The importance of ITIL4 adoption for IT service management in insurance companies

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Abstract - **In post pandemic era where companies already adopted digital agendas in their everyday business, conservative businesses as insurance companies must intensify activities in creating new values and use of the potential innovations. Insurance companies have to follow new age users, developments in society and new economic laws with new demands for insurers. As ITIL4 describes an operating model for the delivery of tech-enabled products and services, the importance of its adoption significantly increases. The way this adoption helps insurance companies is described in this paper. Trends in IT operations, such as agile approach are also considered.**

Keywords – ITIL4, Incident Management, change management, Insurance

I. INTRODUCTION

ITIL is a framework for service management and a professionally recognized certification scheme that supports organizations and individuals in gaining optimal value from IT and digital services [1]. Whereas previous versions of ITIL have been perceived to focus overly on IT&SM processes, ITIL4 now provides 34 management practices that incorporate guidance on how best to achieve the desired outcomes and value. These practices provide guidance on architecture, organizational change, projects, workforce and talent, stakeholder relationships, risks, business analysis, IT assets, and others [1], [2]. The process of moving from owning processes to creating a service-focused value chain is an evolution and demands involvement and collaboration of all company's departments including management and stakeholders [3]. In ITIL4 practices are part of the service value system. Service value system (SVS) includes Guiding principles, Governance, Service value chain, Practices and Continual improvement [1]. In the SVS is the service value chain which is a flexible operating model for the creation, delivery, and continuous improvement of services. The service value chain defines six main activities [1], [2]: Plan, Improve, Engage, Design and Transition, Obtain/Build, Deliver and Support, Products and Services.

ITIL4 also indicates seven guiding principles: Focus on value, Start where you are, Progress iteratively with feedback, Collaborate and promote visibility, Think and work holistically, Keep it simple and practical, Optimize and automate [2].

The Internet itself is altering the ways to provide and manage products and services, and the relationships between organizations and customers, which is leading to a redefinition of their value chains [4], but using ITIL as a framework can even increase profits. Transformation in IT was accelerated by COVID pandemic conditions making companies to massively adopt teleworking [5]. That was a start point for all kinds of businesses, but companies had to choose services and implement changes in order they've found adequate. In many cases, customers and employees are not always receptive to what technology has to offer, nor do they recognize its associated value [4]. Changes in customer demands also underpin potentially high degree of awareness among managers about market changes and emphasizes the need for consideration of organizational consequences when new segments are implemented [6]. Although significant, new business models based on technology-impact growth, were slowly applicable to the insurance industry in Bosnia and Herzegovina.

Provisioning of relevant reports to supervisory authorities was the first step in the mandatory adoption of new technologies. Opportunity for additional profit and new value for insurers is provided through using mobile applications and online sale, where the benefit was also for customers – they could customize products they use and buy it online. Marketing adapted to new customers is also an essential step in business changes, especially using social networks. Segmentation of the market and new products like travel insurance policies

with risk of covid19 covered got insurers step forward, as in businesses as in segment-specific strategies and plans. In this paper potential changes in an insurance company from Bosnia and Herzegovina will be discussed. Company taken as an example is company of 500 employees – active system users, where more than 150 are in the back office. System is distributed in 8 regional centers and more than 150 offices. IT consists of 10 members, including the CIO, divided into three divisions – application support, system and technical support, software development. The company hasn't been using ITIL framework on any of the processes.

Section I of the paper is introduction. In section II incident management will be discussed. Section III describes change management and change enablement, and final section IV is about conclusion and future work.

A. *Literature review and motivation for research*

The implementation and adoption of ITIL4 would include an examination of the challenges of implementing ITIL4 and a comparison with other service management frameworks. Even the ITIL4 is in use since 2019., there is a significant lack of recent literature. Using literature mainly related to ITIL3, foundation for further research of ITIL4 can be provided. Documents in used databases can provide us better review: main interest in ITIL research was in year 2012 for incident management, and year 2009 for change management. The analysis of used databases is at follows:

TABLE 1: LITERATURE REVIEW

Search topic	**Database**	**Analyze Result**	**Category of interest**
ITIL incident management	Web of science	79	Computer science - 72
			Engineering - 18
			Telecommunications - 12
			Management - 5
			Business, Economic- 8
	Scopus	168	Computer science - 138
			Decision sciences - 40
			Engineering - 38
			Mathematics 36
			Business - 25
ITIL change management	Web of science	96	Computer science - 93
			Management - 16
			Engineering - 14
	Scopus	171	Computer science - 134
			Engineering - 41
			Business - 33
			Mathematics - 33
			Decision sciences - 28

II. INCIDENT MANAGEMENT

The adoption of ITIL in an organization represents an innovation that is both influencing and influenced by the organizational context. Two of the main reasons for adopting ITIL are to become a service-oriented organization and to deliver IT services that meet business needs [7]. When it comes to small and medium businesses that use the ITIL platform, literature [8] [9] says that the first procedure to be implemented should be the Incident Management Process. ITIL defines an incident as an unplanned interruption to or quality reduction of a service [1]. Some IT examples are the too slow internet, a business application is inaccessible, or a printer not working. Adapted guiding principles can be used as proposed methodology for the process implementation.

A. *Focusing on value*

A value stream is a path that starts with demand and concludes with value generation along the service value chain [9]. First, we have to initialize the project – define areas of improvement and set the goals to be achieved. This is the point where is decided would that change be beneficial to company, and what are the values system company could gain. Some of the values of implementation incident management process are better system of information toward customers, increased hardware reliability, improved monitoring and audit made easier. Stakeholders are to be introduced to changes at this point.

In the system analyzed in this paper, focusing on a value is point where:

- All top managers are aware of the project – they are owners of the process – it is guided by company's vision and financed by management.
- System parts that need to be improved are defined – focus is on system monitoring and mobile application
- There is a detailed plan with defined resources for transforming company into service-focused organization

The mission of IT department here is to implement applications which support business activity and reorganize IT team to better meet company's expectations. Shared vision between IT, HR, finances, marketing and other sectors is mandatory to be established.

B. *Current system state*

Customer expectations are higher than ever and they demand IT support instantly and all time available. Because of availability all kinds of support in systems people use privately, they expect mobile support application or chatbot integrated in business application they use. Knowledge base of the observed system doesn't prevent technicians to do routine tasks repeatedly, because the base is not overall accessible.

Also, specialists could be more effective if they weren't interrupted by tasks that could be automated. Current system could be updated in better logging incidents and managing fixes. The system considered in this paper uses an internally developed help desk, mail communication, MS Office 365 planner, MS Teams and PRTG monitor for managing incidents. That could be considered as a second step of the guidance toward ITIL implementation – start where you are.

Literature overview [3], [4], [5], [10] can provide guidelines for the start point analysis. Inventory conduction is the first step in all analyzed literature, but its outcome should be a document that outlines the conduction result and provides analysis of the current situation, as well as the position of current IT practices compared to ITIL best practices. If profiled first, case organization [11] would be as follows:

TABLE 2: ORGANIZATION PROFILE

Geographic location	Bosnia and Herzegovina
Sector	Private
Size	Medium
Industry sector	Insurance/finance
Business focus	Local
System users	Approximately 450
IT department employees	10
IT structure	Centralized
Server and network infrastructure	System adequate
Trigger/ITIL justification	Processes not formally defined or documented, inefficient tracking of incidents through to changes

Secondly, interview with IT department and minimum 3 other departments should be provided. Goal of this step is to analyze practices of IT department, get the list of equipment, applications and other resources they use, and get user feedback from other departments. One of the user questionnaires should be about user satisfaction. ITIL4 focuses on organizations and people, so this is a point to determine if people have enough skills and knowledge to get the job done, but also if they have the information, they need to run the business properly.

ITIL4 best practices that correlate with the observed system would be: the ability to implement the process with a minimum of activities performed; investing in people with the right skills; selecting the right communication channel; information management integrated into the process; continuously updating the knowledge base; automating incident management.

C. The action plan

The incident management process consists of following steps: logging, prioritization, investigation, communication, resolution, review and closure [1].

In company analyzed, there are average 600 phone calls, 350 mails and 20 tasks in help desk per month toward IT. Not all of them are incidents, but following framework could enable process automation and better communication between parties. The ITIL4 aspects of collaboration, automation, and simplicity reflect the values found in other frameworks such as Agile, DevOps, and Lean methodologies [2] which definitely brings using mobile support apps and automation of processes in focus. Automation is most important fact in process and knowledge base connected to it empower users to solve some problems themselves.

TABLE 3*:* IMPACT ON BUSINESS BY ITIL4 ADOPTION

Steps of Incident management process	**Sector and tool used now**	**Example**	**What ITIL4 can improve**
Logging	IT/Help desk log, mailboxes (i.e., employee opened a help desk task)	Module for Online travel insurance is not working	Automation
Prioritization	IT and other sectors/employees sort tasks on personal experience using knowledge base	Customers can be redirected to store, so priority is set by IT on medium	
Investigation	IT and other sectors/ knowledge base, all used system dedicated applications	Application debugging, checking online status, checking if all APIs are working properly	Diagnostic, knowledge management tools help users to solve some issues themselves
Communication	IT in collaboration with sales support/ Functional and hierarchic escalation	Internal exchange of all states of the incident in IT sector	Detection and correction of automations, ease of accessibility
Resolution	IT/resolution confirmation through Help desk or email	All bugs corrected	
Review	IT, sales support/ knowledge base and shared user manuals	New entry in knowledge base	
Closure	IT and other sectors/Help desk, email, phone	Employee who opened task verified the same	Mean resolution time improved

Final goal of incident management implementation is to improve troubleshooting time response and the time completion of client request, agent motivation, and improved system availability. Investigation step usually takes the longest period of time of every incident. This is the sub process organizations can segment, and get customer feedback sooner in process. That is actually an iterative agile approach, which will enable company to respond to changes in the perception of value. Collaboration iteratively with feedback also continues through next steps.

D. *Collaborate and promote visibility and think and work holistically*

The 4 dimensions of ITIL4 cover value streams and processes, information and technology, organizations and people, and partners and suppliers. People are the collective representatives of the whole system, so close collaboration is critical [1] [2]. In organizations like this, processes, projects, and service value streams can flow across many teams and departments. All these departments have to give their contribution to organizational knowledge pool. Problem solution as for example a new insurance product doesn't calculate premium correctly involves all teams from sales department to development team in collaboration. This step has its mayor impact on following incident management process steps: communication, resolution and review. Choosing the right tool for communication is also of great importance for this step. Recommendation is to use multiple communication channels, and get a software for sorting and categorizing collected data. Sharing regular software and system changes, updates, as keeping even virtual meetings regularly improve user satisfaction and encourage users to solve some problems by themselves. Company's services don't usually start and end within the same department. This is the right point where review of information architecture can be done, as well as redesign documentation and even improvement categorization of causes of incidents – what prevents incident from happening.

E. *Economical use of resources*

Implementing ITIL4 doesn't mean abandoning all previous frameworks and good practices that work for our system and keep it functional. Good managers should focus on achieving the desired result and not waste resources on shortening code or its elegance, but also take the optimal number of steps to achieve the result. Critical success factors factors include [11]: senior management commitment, employee awareness, training, software selection, culture changes, and customer-focused metrics. Performance must be measured at all costs, and companies must measure their progress.

F. *Optimization and automation*

ITIL Incident Management Reporting aims to supply Incident-related information to the other Service Management processes, and to ensure that that improvement potentials are derived from past Incidents [1], but optimization and automation is mostly about people. ITIL4 practices encourage organizations to use human resources more wisely – they should perform actions on incidents that cannot be atomized and not on those which can [10]. Collaboration is also very important so all employees can benefit from organizational knowledge. Development of change culture also has to be stimulated to implement. The mayor benefit is for IT support if processes are automated. Metric to evaluate automation must be adopted. Also executing the improvements in iterative way embraces agile in process.

III. CHANGE MANAGEMENT

After COVID19 taught us how fast people can adapt to new normal, it is important for companies to adopt change management models so they can achieve business success in a safe way at a faster speed than ever before [12]. ITIL4 changed "change management" as known in ITIL3 to "change enablement" and it defines the purpose of the new change enablement practice as: "To maximize the number of successful service and product changes by ensuring that risks have been properly assessed, authorizing changes to proceed, and managing the change schedule" [1]. Collaboration between sectors, which is also recommended in the ITIL4 guidelines, improves the chances of long-term success. ITIL4 changed guidance includes how different levels of complexity affect change needs:

Figure 1: ITIL4 reflects complexity as a critical factor for change [1]

Type of change will determine the level of assessment, authorization, and documentation required. Literature [1] identify three types of change, depending on risk and impact a categorization also recognized applicable for Insurance Company in this paper:

TABLE 4*:* THREE TYPES OF CHANGE

Type of change	**ITIL4 coverage**
Standard change (i.e., user password resets and operating	A low-risk, pre-authorized change that is well understood and fully documented and can be implemented without needing

system updates)	additional authorization. Requires a full risk assessment and authorization only during creation, or modification due to business change or occurrence of an incident.
Normal change (i.e., Insurer application upgrade, hardware upgrades)	A change that needs to be scheduled, assessed, and authorized.
Emergency change (i.e., Regulatory changes the business process)	A change that must be implemented as soon as possible. The process for assessment and authorization is expedited to ensure quick implementation, so scheduling and documentation is not a priority.

Another connection with agile approach is change authority. Decentralized change approval enables working in sprints in different domains related to a change. Change advisory board (CAB) consists of individuals or groups with different knowledge. Of course, it is essential that the correct change authority is assigned to each type of change. Whether CAB is one person or a team, they must communicate broadly within company's departments and involved stakeholders. Here, use of scheduler is suggested at least for planning of changes, communication, avoid conflicts, resource allocation and informing parties about implemented changes. Change advisory board of insurance company, which is the subject of research in this paper, is consisted of IT management including CIO, technical support director, directors of the underwriting department, claims department, policy administration and customer service.

Change enablement guides process to stakeholder's satisfaction – it is customer focused process, which also helps organizations to continuously improve their infrastructure and processes ensuring business to easily implement necessary changes without affecting other business operations. Process steps from ITIL3 [13] can be summarized in ITIL4 into: change submission, change planning, change assessment, change implementation, change review, and change closure.

Change submission is usually ticket generated by service desk – initiating change. Basic information like change type and priority is also collected here. For a Company in this paper suggestion would be using of company's help desk in this step. Predefined templates for data collection are prepared by company. Planning is step where are created documents like back out plans or downtime plans. This is a step needed to be presented to stakeholders. Checklist is the most common approach here. Next step is change assessment. Change plan here needs to be approved by change advisory board. In observed company that should be suggested to top management including CIO, team managers, technical support, and finance and marketing teams. Change implementation involves actors from included sectors and work dispersion through the given tasks. Using project management software can significantly ease change implementation, especially if large-scale changes like digital transformation or moving backup to cloud are in focus. After a post-implementation review is carried out to ensure there are no deviations in the implementation, the change can be closed. Closure can have one of statuses: success, fail, incomplete.

IV. DISCUSSION

This this paper highlights the importance of adopting ITIL4 for IT service management in an insurance company that has not yet implemented it. The reason why this company was chosen is the specifics of insurance caused by the pandemic, and the company has experienced a digital transformation in travel health insurance in a short period of time. The organization has recognized the need to become service-oriented and provide IT services that meet business needs to maintain its position in the market, but framework is still missing. The analysis of the available literature allows the elaboration of recommendations specific to this insurance company, for which this paper was the introduction. As recommended by the literature [8], [9], first process to be implemented is the incident management. Incident management should be followed by change management.

There are many factors that can affect the differences in insurance between Bosnia and Herzegovina and other countries. First factor, already mentioned in this paper, are regulations. The regulatory authority is already divided into two entities, each with its own rules, which can affect the types of insurance available, payment methods, and general terms and conditions of insurance companies. This also affects pricing, either in the country itself or in comparison with other countries. Knowing that there are companies in the country that have their headquarters in the countries of the European Union, the conditions may vary between the insurance companies themselves, which only reinforces the need for structured management, where ITIL4 can help.

V. CONCLUSION

In today's insurance market, companies must demonstrate maximum competitiveness. Without guidelines through processes, this competitiveness only becomes a burden. On the other hand, knowledge based on ITIL4 best practices can greatly facilitate key

processes within an organization. Organizations are finding that in reality they need a set of incident management processes to handle different categories of problems quickly and efficiently using digital service management [1]. This could also be observed in the company considered in this paper.

ITIL4 is based on market requirements, and it emphasize value, so companies can use it not only for IT services, but for all services of business. In this paper is given an initial proposal for an insurance company that has no ITIL implemented – to encourage its adoption and company's market position improvement. This could be provided by enabling all teams to work on new values and the prerequisites for that would be reduction in the execution time of processes, improvement of control and monitoring, increase in clients' satisfaction, cost reduction, decreased system downtime, even the better positioning IT in company, all provided by ITIL4 framework. The fact company has not implemented ITIL before makes it easier to accept idea of implementing the new one.

This paper showed how ITIL4 processes Incident Management and Change Management can improve the operations of any company. Incident Management and Change Management processes when implemented in the business environment of a company must be clearly presented through the presentation of: key goals, key activities, risks, roles, responsibilities, key performance indicators and critical success factors.

Future work should follow ITIL4 implementation in a company and provide all metrics and measuring results for comparison. Analysis which services should be implemented would be a prior step to measuring process.

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