ISSN 3032-3533
Vol 1, No.1 (2024)

Risk Management Framework Understanding Business Processes to Manage Risk

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Abstract— ***Risk management is a method used to control risks that are full of uncertainty, have a large impact, and are always threatening. Risk governance itself consists of risk identification, risk assessment, risk evaluation, and risk management. Risk management can be developed by combining the framework with business process management, making it easier to identify the risks that exist in each activity. This research aims to develop the concept of a risk management approach through business process management. The research used is qualitative research using two types of data sources, namely primary data and secondary data. The tools used are mind maps from the application mind manager. The research was carried out at the Indonesian Aviation Academy Banyuwangi for nine months starting from January to September 2022. The research results show that the two management frameworks can be developed simultaneously and used together with the final goal being good risk governance to achieve organizational goals. The development of these two frameworks can add value, provide value, and create new value in addition to maintaining existing value.***

Keywords— Risk Framework, business process management, risk management

I. INTRODUCTION

Risk is a science with multiple concepts [1]. Risk is a condition where humans are self-aware (*self-aware*) exposure will occur (*exposure*), possibility (*probability*), and uncertainty (*uncertainty*) on something detrimental to themselves and their property [2].

Risk is always there, is permanent, and is very difficult to deal with, so it requires a management framework that is both theoretical and practical [3]. Risks can occur in various aspects and sectors such as agriculture [4][7], construction [8], [9], product development projects [10], and environment [11], including investment [12]. The nature of risk that always exists in every human activity, and is full of uncertainty, requires identification, assessment, and management [13], [14]. Activities for managing risk are called risk management [5], [6].

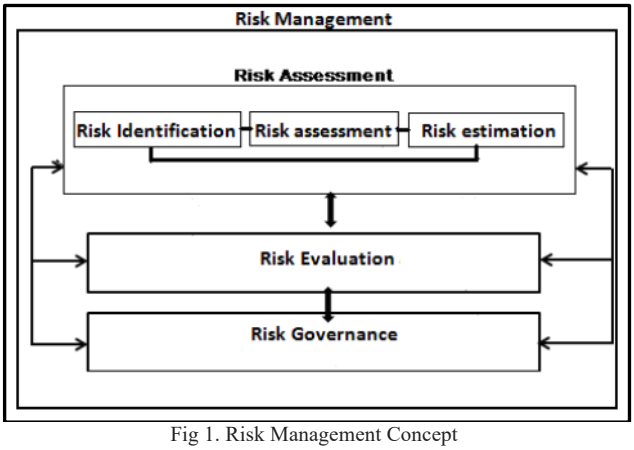

Fig 1. Risk Management Concept

Understanding that the nature of risk is always present, permanent, and full of possibility and uncertainty, steps and approaches are needed to minimize organizational risk in achieving organizational goals [11], [15]. The steps and approaches taken are part of risk management or risk management [16], [17]. This explanation illustrates how important risk management is in organizational management, so risk management must be taken into consideration in decision-making by management [18]–[20]. To help management understand risk management in the decision-making process, a risk management framework is needed [21], [22].

The risk management framework has developed over time along with the development of more modern technology and governance. This is because risk can increase when innovative methods and new approaches are used in working on or developing something [23]. In ISO 31000, 2018 it is explained that risk management is the main task in project organizations which is mandated by law, industry standards, and internal guidelines with the principle of "creating and protecting value". The dimension of the values created and maintained is output (*output*), results (*outcome*), and benefits (*benefit*) [24]. Management framework consists of risk

identification, risk estimation, risk assessment, risk evaluation, and risk governance [25], [26].

The approach taken in carrying out risk management always begins with implementing risk identification in the organization [8], [25], reporting [3], and objectives [27]. Several researchers have approached the risk of business processes in organizations with different frameworks and models [16]. This research will develop a simpler framework so that it is easy to apply to the process of integrating business process management with risk management in organizations.

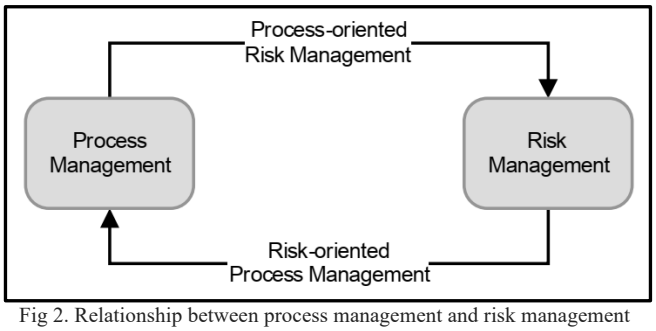

Fig 2. Relationship between process management and risk management

Aviation is an environment full of risks. The most serious risk is aviation accidents [28], [29]. However, because aviation has high risks in its operations, much effort has been dedicated to developing safety matrices with qualitative or quantitative approaches to detect all possible hazards and risks associated with aviation operations [3]. The main risks in aviation include death, serious and minor injuries, delays and cancellations, repairs or maintenance, damage, and loss of image [27]. So risk management is needed that identify all hazards and risks in an integrated manner [14], [22].

The Banyuwangi Indonesian Pilot Academy is an educational institution that carries out flight operations. The flight operations carried out are pilot training and education. Pilot training activities aim to educate participants from having no skills to being skilled in flying aircraft according to the competencies achieved. Apart from flight operations (and all its aspects), API Banyuwangi also carries out other functions and activities that also have high risks, such as managing state finances, while since the founding of API Banyuwangi in 2013, there has not been and has never been a business process register or risk register.

This research aims to develop an approach concept in identifying risks through identifying business processes to find out each existing risk with a simpler concept. This business process identification aims to determine the capabilities and strengths of the organization in carrying out its business (activities), while risks are identified from each activity carried out in each business process.

II. LITERATUR REVIEW

1. Business Process Management

Adding value to processes becomes more important in the implementation of organizational activities than the function of the hierarchical organizational structure, and business processes are the main key in integrating organizations [10]. Business process management is a process where implementation is woven into a single unit to develop the performance of the organization, business processes are dynamic with developments that make it possible to replace old business processes with new business processes if there are changes [30].

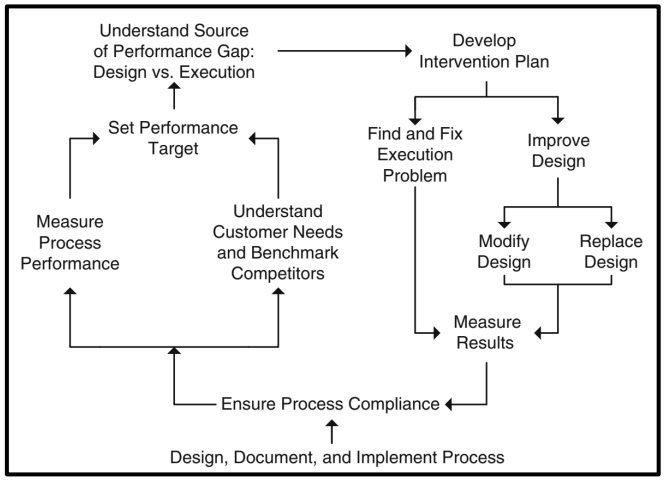

Fig 3. Cycle of a business process

The business process management method provides continuous development with the philosophical concept that everything "can be developed" which tends towards implementation of lean management and Six Sigma [17]. Business process management also accommodates innovation and technological developments in increasing value [31].

2. Risk Management

Risk management is a defensive reaction carried out by organizations against increasingly demanding environmental developments [32]–[34]. The risk management process and mitigation measures must be explicitly linked to the goals of the organization or sub-organization [32]. Risk management must take into account strategic decisions taken at the management level [35]. Risk management practices can create value if important stakeholder, process, and context considerations can be integrated [1].

Risk management when implemented in an organization must consider the specific needs of the organization [18]. The essence of risk management is risk identification, risk evaluation, risk treatment, and risk monitoring [4].

III. METHOD

Qualitative research was taken for the process of developing a risk management framework by combining it with a business process management framework. These two frameworks are combined into one unit in a comprehensive identification process from business process identification to the risk management process with the results in the form of risk mitigation steps.

Research in the form of business process identification, risk identification, and risk management was carried out from January to September 2022 at the Indonesian Aviation Academy Banyuwangi. The data used is primary data and also secondary data. Primary data is the results of business process identification and risk identification, while the secondary data used is the results of previous literature which was used for the process of developing a business process

management framework and also a risk management framework to become a single unit. The tool used in this development is the Mind Manager application.

IV. RESULT

1. Development of Business Process Maps

Identification of business processes is carried out at the Indonesian Civil Aviation Academy (API) Banyuwangi based on organizational regulations and work procedures number PM 96 of 2021 which are synchronized with Minister of Transportation Regulation number 50 of 2017 concerning guidelines for preparing business processes and SOPs at the Ministry of Transportation. The business process map in the organization is divided into 3 levels, namely Level 1 is the business process of organizational functions, Level 2 is the business process function of sections, sub-sections, coordinators, and units while Level 3 is the lowest business process in the form of activities with products standard *operational procedure* (SOUP). The business process map concept used is as follows.

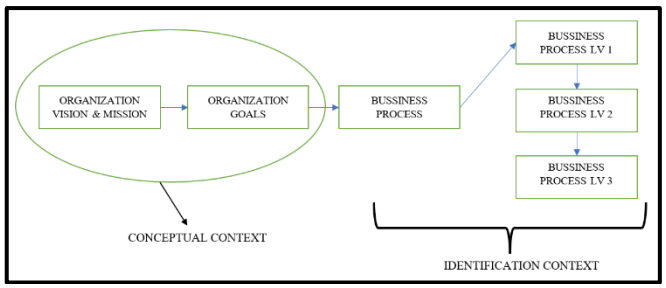

Fig 4. Development of a business process map

Level 1 business processes at API Banyuwangi, as stated in article 3 PM 96 of 2021, include preparing educational program plans, organizing vocational education in the aviation sector, carrying out research and community service, carrying out internal audits, implementing and developing quality assurance system, administrative management academics and cadetship, management of financial, general and cooperative affairs, management of educational facilities, development of learning programs and data, implementation of character development, management of support units and implementation of business development, development of the academic community and their relationship with the environment, and implementation of evaluation and reporting. The concept of a business process map can be seen in Figure 5.

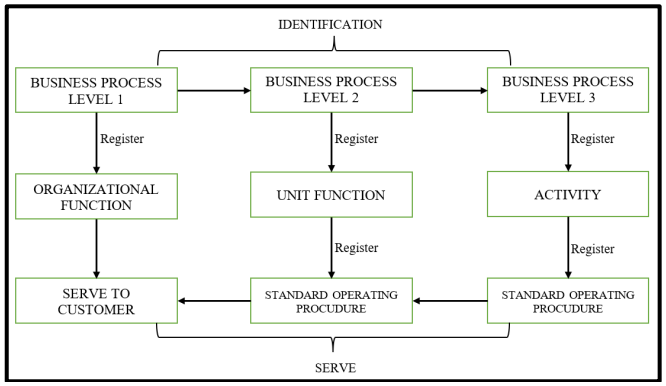

Fig 5. Business process map concept

The identification process must ensure that all tasks and functions derived from level 1 are described at level 2 and then at level 3. The description of tasks and functions at levels 2 and 3 must still reflect the Vision, Mission, and goals of the API Banyuwangi organization. It was recorded that the level 1 business processes in the API Banyuwangi were 13 business processes, which decreased to 68 business processes at level 2, while the level 3 business process map was 411 business processes (activities). Development of business process maps using applications *Mind Manager* with a method *mind map*. Each business process that has been identified is deregistered so that existing business processes can be recognized. The register function also allows grouping if new business processes emerge due to the development of the organization's functions.

2. Risk Identification and Management Through Business Process Management

Risk identification is carried out after business processes have been identified up to level 3 (activities). Each element of the activities is detailed and an analysis and identification of each risk is carried out in the process of implementing these activities. Risks are determined by referring to previously identified business processes. The risks identified are risks that can arise every time a business process is implemented, so it is possible that one business process can have many risks with different probability values and impact values.

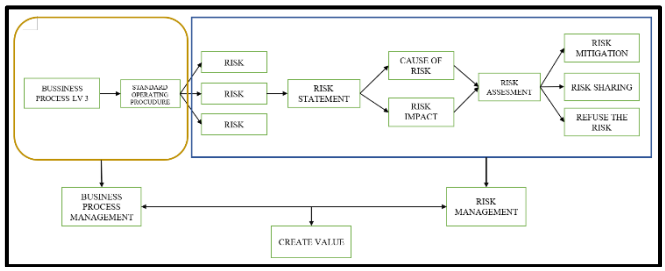

Fig 6. Business process management and risk management concept map

Figure 6 explains that business process management can be synchronized with risk management to create value (*create value*) (Ahmad & Van Looy, 2020; ISO 31000, 2018). Business process management and risk management both aim to create value and protect value, so combining them in one scheme is best [16].

Risk management is ultimately used to prevent the risk itself from occurring, so risk management functions to maintain value, while business process management is used to provide value to every activity carried out. Combining the two can provide added value and even create new value in every activity carried out in the organization. Providing added value even creates new value in every activity process so that it tends towards direction lean management and Six Sigma, with the concept of continuous improvement so that organizations can move further agile while existing and future risks can be managed [17].

V. DISCUSSION

The Indonesian Civil Aviation Academy (API) Banyuwangi as the implementation of pilot training has a concept safety *management system,* this concept ensures that protection and production continue to run well by playing

their functions without exceeding the maximum limits that have been set. Protection and production must go hand in hand, it cannot be heavy on one side. Excessive protection without paying attention to production will result in bankruptcy, while excessive production without paying attention to protection will result in disaster (*catastrophe*).

Risk management in much literature starts from risk identification but still has to state what activities must be carried out so that the risk arises [6]. The business process management framework is linked with risk management, and in this research, a simpler method for identifying and mapping business processes was developed. The levels of business processes can differ depending on the scope and structure of the organization. The bigger the organization, the bigger the business processes. However, management is always divided into three parts, namely high-level management, middle management, and lower-level management (line management).

Each level of management has its business processes and has different levels of policies. Knowing business processes down to the line level is the best so that top management can know the business processes.

Risk management must start from the line management level. Risks resulting from management can be grouped based on the assessment results so that risks can be chosen as priorities for high-level management. This selection of risk priorities can be called risk appetite (*risk appetite*) which is part of organizational risk management. The risks that are prioritized are risks at level 1 business processes, which means they are risks for the organization.

Every risk that is controlled, makes the organization more agile in managing business processes. business processes will give rise to new risks in the process of activities, so new risk management needs to be carried out. In other words, risk management and business process management are continuous cycles so if these two types of management are carried out well, they will provide added value and even create new value.

VI. CONCLUSION

Identifying risks is not easy if you don't know the business processes that run an activity. Risk management frameworks have evolved and business process management frameworks have made organizations more agile in carrying out their activities. Unifying the two management frameworks is not impossible and can be done. A strong identification process can start with understanding the organization's business processes from the top level to line management. Understanding this business process will make it easier to identify risks that may arise in the process of implementing activities.

Each risk that has been identified and managed can be grouped based on its value and ranking (the risk assessment results). The results of this grouping can be used as a consideration for choosing which risks are priorities for attention and become the risk appetite of organizational leaders and become organizational risks.

The results of this research have shown that combining the two frameworks is possible. The ultimate goal of this merger is a continuous cycle between risk management and business process management that can provide added value and make it possible to create new value without abandoning its main task, namely maintaining existing value.

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