Research Development Strategy to Support University Become a Higher Education of Legal Entity

Nurhayati Nurhayati[(✉)] and Sari Edi Cahyaningrum

Universitas Negeri Surabaya, Surabaya, Indonesia
nurhayati@unesa.ac.id

Abstract. It is necessary to develop a strategic plan for research activities to support the University as higher education of legal entity. Strategic planning for research development is very important to do to create and maintain a match between the organization's goals and the resources it has to capture opportunities that are always growing. The objectives of this research are: to develop a Strategic Plan (Renstra) for the University towards Public University Legal Entity (PTNBH) especially in the research field. This research is development research that will be carried out using qualitative method. Quantitative data is derived from the evaluation of the implementation of Unesa's research performance in previous years and feasibility data of the Strategic Plan (Renstra) of Research and Community Service Institute (LPPM) Unesa's performance. The qualitative research method was collected by a literature study approach and interviews. From the existing research performance data, a strategic plan will be made so that Surabaya State University (Unesa) is ready to become a state university which is a Public University Legal Entity.

Keywords: Strategic planning · research performance · public university · legal entity

1 Introduction

In the era of the industrial revolution 4.0 and society 5.0 as it is today, the State University of Surabaya (Unesa) is required to be able to innovate and collaborate and be independent in managing itself. Based on the Higher Education Law No. 12 of 2012 Article 65 paragraph 4 [1], Public University – Legal Entity (PTNBH) has wider autonomy than Work Unit State University (PTN Satker) and Public University – Public Service Agency (PTN-BLU) [2, 3]. This change in status increases the complexity of management and increases the risks that must be faced by management.

The activity that supports Higher Education's three pillars (tri dharma) of Higher Education namely education, research, and community service. Research and development activities as one of the dharmas (Three Pillars) have a very important role in supporting the advancement of science and technology [4, 5]. Without research and

development, the pace of scientific development will be hampered. Unesa towards PTN-BH has a Research and Community Service Institute (LPPM) which has a very large role in the application of science and technology that can generate income. Community Service Activities under LPPM need to be increased in quantity and quality, so good cooperation is needed between LPPM and majors/study programs. All community service activities must be under the coordination of LPPM so that the quality can be controlled [6].

Based on the existing background, the problem that will be examined in this research is how to develop a research strategy at the State University of Surabaya (Unesa) to support Unesa to become a state university with a legal entity. Strategic planning and implementation are very important in propelling a university to success, as it is the basis for examining the current situation and forecasting future formations, and being prepared with a competitive advantage [7]. Research that supports Unesa PTNBH is needed as one of the basics/guidelines for implementing UNESA research towards PTNBH so that research activities are directed, quality, and sustainable for the development of science.

In research activities, it is necessary to develop a strategic plan that must: (1) be flexible, meaning that it can accommodate the possibility of unexpected things, and (2) Dynamic, which means that it can change within a certain period according to needs and demands, without changing the final goal [8]. The purpose of preparing the strategic plan is as a reference in operating the development activity plan following its main tasks and functions, the plan is not merely compiled and silenced, but the plans that have been made must be implemented as a reference that the organization is an organization that works effectively and performs, in assessing whether the organization has a good performance, it can be seen from how many strategic plans are implemented to achieve the medium-term vision. Strategic planning is a roadmap that gives the organization direction from now, where to go, or where to be in five or ten years. Strategic planning involves multi-year projections that are not as specific as operational planning [9, 10]. It is either a series of organized activities that help the organization to organize the present based on the projected future targets. An organization needs to develop a strategic plan by building a comprehensive plan that includes a long-term plan that is supported by strategic elements. The strategic plan should be based on the current actual situation and be simple, clear, and written. And it should also give enough time to complete otherwise it will cause problems [11, 12].

Renstra is an activity to plan for the future through program preparation, preparation of resources, and arrangements so that future goals are achieved. A step-by-step plan that will lead the institution to reach its ultimate goal according to the goals implied in the Vision and Mission statement. Diaman Unesa's vision: "innovation-based World Class Entrepreneurial University" [2, 13, 14].

Quality research results are research that can bring about a change in society in the form of using research results for daily life, for various industrial sectors, and contributing to economic development and government policy (governance). It is hoped that these researches can provide results in the form of income for the University that can be used to finance operational needs. The quality of research results is also proven by the number of subsequent studies citing published research results. The increasing number of citations indexed at internationally recognized citation institutions needs to be pursued
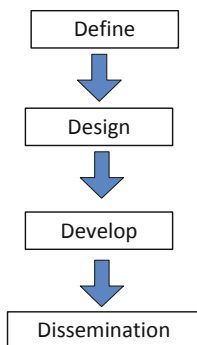
Fig. 1. Research Model

with various internal and external strategies by increasing the synergy between research management systems, scientific publications, personnel information systems, and performance/remuneration monitoring systems. Because in the requirements for changing universities to become PTBHN, some of the requirements listed in the Minister of Education and Culture No. 88 of 2014 in article 2 are as follows. (1) administering the Tridharma of Higher Education, (2) managing PTN organizations based on good governance principles, (3) meeting the minimum standards of financial feasibility, (4) carrying out social responsibility, and (5) playing a role in economic development. Several standards must be met and documents must be prepared such as PTN self-evaluation, PTNBH long-term development plan, PTNBH statute draft, and transition plan from PTNBH [14].

Renstra is a form of evaluation of PTN, especially Unesa so that it can change for the better and lead to PTNBH. Factors that can be improved to achieve PTNBH encourage lecturers or students to conduct research aimed at the community and students to be able to collaborate and excel in producing innovative works that can be developed and applied in the community and can generate income generation. The change of a university into a PTNBH is the shared responsibility of the staff and leaders at Unesa in making it happen.

2   Method

This research uses Research and Development (R&D) method. Research and Development is a research method used to produce certain products and test their effectiveness of these products. The development model used is a 4D model consisting of 4 stages, namely: Define (identify), Design (design), Develop (Development), and Disseminate (Deployment) at Fig. 1.

This study aims to develop a research development strategy from the State University of Surabaya (Unesa) into a State University with a Legal Entity. At the define/identification stage, the researcher evaluates the implementation of the 2016–2020 LPPM Unesa Research performance and formulates a Strategic Plan (Renstra) format for the Unesa LPPM Research Performance towards PTNBH 2021–2025. Based on the results of the evaluation of the implementation of the 2016–2020 LPPM Unesa
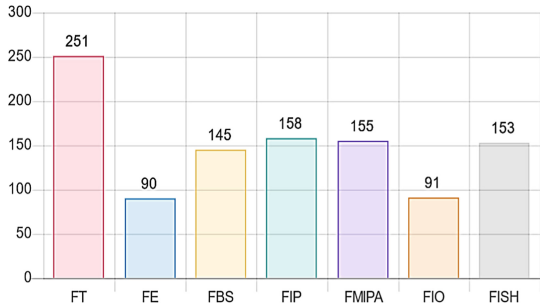
**Fig. 2.** Research in each faculty 2016–2021

Research Performance, it will be used as a basis for preparing Unesa's research strategy toward PTNBH. The design stage is to compile a validation instrument that will be given to several related parties. The development stage is the stage to produce a product development which is carried out through an expert appraisal followed by a revision stage. The goal at this stage of development is to produce a final product in the form of a Research Development Strategy at the State University of Surabaya to support Unesa as a State University with a Legal Entity.

The research subject in this study is the Center for Research and Strengthening Innovation (RPI) which is supported by top management as well as existing centers at the Institute for Research and Community Service (LPPM) Universitas Negeri Surabaya (Unesa) in 2022, Sub-Section Data and Information, General Sub-Section and Finance Division. The data collection technique used in this study uses research data that has been carried out along with literature studies. The draft strategic plan towards PTNBH that has been made will be tested on several stakeholders. Suggestions or input will be used as consideration for researchers to revise the initial design of the product. In this study, the preparation of the research strategic plan towards PTNBH is still in the draft stage and is still waiting for the strategic plan from top management so that data collection on responses to the draft strategic plan that has been made cannot be carried out.

3   Results and Discussion

Unesa as an academic university must immediately change its institutional orientation from a teaching-based university and a research-innovative based university to an entrepreneurial-based university. This effort is used to change the academic process that has been consumptive in nature to be productive. The first two bases, namely the teaching base and the research base, especially on inventions are consumptive.

Figure 2 shows the data related to research proposals carried out by several lecturers from various faculties from 2016 to 2021. FT is the faculty of techniques, FBS is Faculty of Languages and Arts, FIP is Faculty of Education, FMIPA is of Faculty of Mathematics and Natural Sciences, FIO is Faculty of Sport Sciences, FE is Faculty of Economics and FISH is Faculty of Social Sciences and Law.
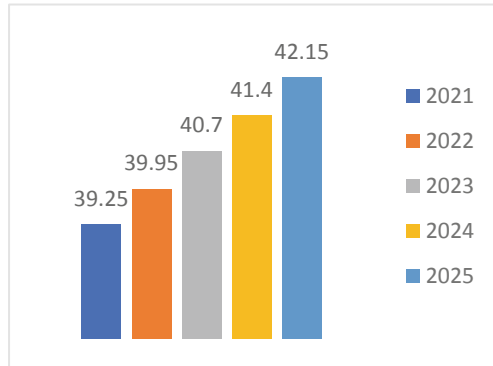
Fig. 3. Unesa research fund prediction (in billion).

In terms of research and community service, in the last 5 years there have been very significant developments. Many lecturers and students competed to carry out research and service, there were even research results that received appreciation from the Ministry of Research, Technology and Higher Education (DRPM DIKTI).

Figure 3 shows The research budget was obtained from external grants from DRPM DIKTI, the Minister of Finance, and other research grant-making institutions and external grants from Unesa PNBP funds. All budgetary resources originating from and/or obtained by the organizers, such as the Government and/or Foundations, are consumed only to facilitate the implementation of academic activities such as lectures and finding-oriented research. Research is an academic freedom and has become an academic culture for the entire Unesa academic community. Lecturers are not the only ones at Unesa who carry out research activities, but students and education staff also have the same right to uphold academic freedom in research activities. Research is expected not only to basic research but to applied research and development to generate income. The academic process becomes productive if the entrepreneurial base can be realized. All academic activities through the implementation of the Tridharma of Higher Education produce various innovations that can be the basis for developing Unesa's income-generating system.

Unesa is included in a university that has a business plan that is realized in the form of a Long Term Plan. In accordance with the vision, "Unesa's education direction is education that supports the establishment of an international-class entrepreneurial university". It was developed to anticipate the dynamics of very fast change in all fields. While unesa's mission is:

1) Organizing education as the foundation and development of innovation in the field of education and non-education with an entrepreneurial perspective.
2) Carry out research to produce and improve the quality of innovation in the field of education and non-education with an entrepreneurial perspective.
3) Carry out community service to disseminate innovation in the field of education and non-education with an entrepreneurial perspective for the welfare of the community.

4) Carry out productive cooperation in creating, developing, and disseminating innovations in the field of education and non-education with an entrepreneurial perspective.
5) Creating a healthy and intelligent academic industry environment based on innovation in the field of education and non-education with an entrepreneurial perspective.

The targets made to improve research fields are:

1. Produce and/or improve the quality of innovation in the field of education and non-education with an entrepreneurial perspective:

   a) Improving the quality and quantity of research to produce and improve the quality of innovation in the entrepreneurial and non-educational fields of education.
   b) Improving the quality and quantity of publication of entrepreneurial-oriented innovations in the educational and non-educational fields in reputable media and/or registered with copyright/patent.
   c) Strengthening the downstream innovation in education and non-education and business incubation as an effort to develop an academic-based industry.

2. Disseminate innovation in the field of education and non-education with an entrepreneurial perspective for the welfare of the community:

   a) Strengthening the quality and quantity of community service that is oriented towards producing innovations in the educational and non-educational fields with an entrepreneurial perspective.
   b) Improving the quality and quantity of publications of innovation work in the educational and non-educational fields that are entrepreneurial-oriented as a result of service to reputable media and/or registered with Patent/copyright.
   c) Increasing the quality and quantity of the fostered in the context of developing entrepreneurial-oriented innovation in the educational and non-educational fields.

3. Develop collaboration in creating, developing, and disseminating innovations in the field of education and non-education with an entrepreneurial perspective:

   a) Increasing the quality and quantity of productive collaboration with foreign stakeholders on the development of innovations in the fields of education and non-education and entrepreneurship.
   b) Increasing the quality and quantity of productive collaboration with national and international stakeholders on the development of innovations in the fields of education and non-education and entrepreneurship.

Each element of the higher education tri dharma is oriented towards being productive, no longer consumptive, to produce innovation and collaboration, both pure elements and/or overlapping elements. Pure elements generate innovation and collaboration in fundamental areas that are urgently needed by industry and/or technology owners to
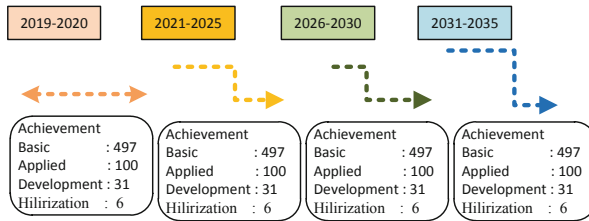
Fig. 4. Unesa research development phases (stages) 2019–2035

increase production and competitiveness in the future. The elements that are integrated produce innovation and collaboration in applied fields that are the needs of the wider community. Figure 4 show the resulting innovation and collaboration became the trigger for the development of Unesa's entrepreneurial base based on academic base activities [15].

In general, the stages of the Unesa Research development program are divided into 4 phases, namely: Phase 1 is the 2019 to 2020 achievements as the baseline. Phase 2 is a plan and achievement target for 2021–2025. Phase 3 is a plan and achievement target for 2026–2030. Phase 4 is a plan and achievement target for 2031–2035.

The research development program in the 2019–2035 period is divided into 4 targets based on the achievements of the Technology Readiness Level (TKT), namely basic research (TKT 1–3), applied research (TKT 4–6), development research (TKT 7–9), hilirization and commercialization of results. study. At the applied research stage, collaborations involving partners have been initiated.

The research strategy in terms of quantity for basic research is to decrease because this research is expected to increase for applied research and so on, while for applied research, development research, and commercialization it increases significantly. Data on the number of research prototypes of the Unesa industry for 5 years from 2016–2020 has an increasing trend with the number of industrial prototypes in 2020 as many as 32; innovation products also have an increasing trend with the number in 2020 there are 4 innovation products. The acquisition of IPR patents, trademarks and copyrights also has an increasing trend where in 2020, 37 patents were obtained; 21 trademarks, and 264 copyrights.

The movement of applied research to research development or commercialization cannot be as fast and as much as basic research because it is constrained by the obligation to have distribution permits and partners. In this case, the Unesa Business Incubator Center (PIBT) must take on the role of increasing cooperation between researchers and DUDI (Business World and Industry), including MSMEs. With these efforts, it is hoped that future research and development gains will continue to increase. In addition to collaborating with DUDI, collaboration with various national and international stakeholders is also carried out. Joint research with foreign countries also needs to be improved.

Continuous quality improvement is carried out for all research starting from basic research, applied research, and development. Collaborative research between researchers and DUDI and research institutes and universities is carried out not only domestically but also abroad. The research results will be implemented in learning activities, and

community service, as well as entering the downstream and commercialization phase to support the achievement of an innovation-based world-class entrepreneurial university.

4 Conclusion

The Research Strategic Plan (RENSTRA) for Higher Education is a document that is prepared to determine the planning and strategy as well as the direction of research development five annual. The preparation of the Renstra towards PTNBH was prepared as an effort determine a unique market space for the future development of Unesa, and at the same time looking for opportunities in determining segmentation unique new developments through the spirit of partnership and seek a balance between value, differentiation and resources needed. The various types of innovations in products, services, methods, and others that have high selling value and value is needed to support entrepreneural university. Its initiation, development, and sustainability require collaboration starting from within Unesa, namely between Study Programs, domestic and/or foreign universities, industry and/or technology owners, other stakeholders, and the wider community.

Authors' Contributions. All authors, Nurhayati and Sari Edi Cahyaningrum contributed writing, correcting, editing, read and approved the final manuscript.

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