National Taiwan Normal University

Strategic Plan for 2010－2014

August, 2010

Roadmap of Strategic Plan 2010-2014

Goal:
A comprehensive university modeled on the spirit of being teachers' teachers, standing out with the integrated development in humanities, arts, and science.

Mission:
NTNU is a comprehensive university built on the core values of sincerity, integrity, diligence, and modesty. It is our deep belief that knowledge and education are conducive to the wellbeing of mankind. We are also committed to meet the needs for the nation's development and to serve the society. We are dedicated to knowledge innovation and holistic education in a comprehensive and diverse learning and research environment for science, education, art, and culture.

Vision:
- ➢ Cultivating future leaders with a holistic approach and multi-disciplinary competence
- ➢ A distinguished university celebrating diverse academic values
- ➢ An exemplar in university education innovations
- ➢ A stronghold to nurture future academic and research talents

Focus 1: Promote holistic education

Focus 2: Foster interdisciplinary education for better competitiveness

Focus 3: Nurture professional teachers of quality and character

Focus 4: Implement performance evaluation, feedback, and incentive mechanism to spur professionalism

Focus 5: Build up first-rated research teams towards international prominence

Focus 6: Enhance international cooperation, reaching out from department/institute/college levels

Focus 7: Construct a U-campus with quality digital service

Focus 8: Develop a campus of artistic richness and sustainable ecology

Focus 9: Embark on administrative reforms and re-engineering

Nurture teachers as instructors and exemplars;
Cultivate professional talents

Promote teaching skill advancement and academic excellence

Create a high-quality teaching and research environment

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I. Foreword

Founded in 1946, the National Taiwan Normal University (NTNU) has nurtured 97,000 graduates in the 64 years of history. For more than half a century, NTNU has been devoted to teacher education, serving as a cradle of numerous distinguished high school teachers. However, the door to teacher education has opened to a wider range of educational institutions in recent years, and the market of education services has also been affected by the declining birth rate. Against this backdrop, NTNU has faced the challenge and transformed itself from teacher education-dedicated institution to a comprehensive university of unique features. Currently, NTNU houses 58 departments and graduate institutes in 10 colleges (College of Education, College of Liberal Arts, College of Science, College of Fine and Applied Arts, College of Technology, College of Sports and Recreation, College of International Studies and Education for Overseas Chinese, College of Music, and College of Social Sciences), which provide a total of 53 master's programs and 31 PhD programs. The 867-member teaching faculty comprises 351 professors, 273 associate professors, 182 assistant professors, and 71 lecturers. Benefiting from this outstanding lineup are 7365 undergraduates, 3612 master's students, 2469 working professionals, and 1334 doctoral students. We also accept international students, consisting of 376 foreign students (including those on exchange programs), 290 degree-pursuing Overseas Chinese students, another 1400 Overseas Chinese students in the Preparatory Programs for Overseas Chinese Students, and more than 3000 students in Mandarin-training (around 6000 enrollments). Coming from more than 80 countries, these students add to the cultural richness of the NTNU campuses.

The 3 campuses in Hoping, Gongguan and Linkou, covering a total of 45 hectares, host 3 stadiums, 3 gymnasiums and 3 auditoriums. With both wired and wireless internet access well constructed ubiquitously, NTNU has made distance learning possible on all campuses. The NTNU libraries boast one of Taiwan's three largest printed and electronic resources, along with the No.1 collection in the education section. The NTNU on-campus residence is sufficient to meet the needs of student housing. Situated in downtown area of the capital, Taipei, NTNU's main campus is easily accessible from many important government agencies (Presidential Office, Executive Yuan, Legislative Yuan, Control Yuan, and Judicial Yuan). It also enjoys the proximity to some of the finest cultural facilities (National Theater, National Concert Hall, National Museum of History, and National Taiwan Museum). On campus, there is also an assortment of student club activities and annual events

such as the Art Season, Music Season, Culture Season and Sports Season, offering a diverse curriculum and holistic nurturing environment for NTNU students.

II. Vision

1. Cultivating future leaders with a holistic approach and multi-disciplinary competence

In the past, the NTNU education used to lead our students onto the path of a reputable teaching career in schools. Nowadays, more and more NTNU graduates enter private enterprises, in addition to educational institutions. Though they continue to demonstrate moral integrity and the spirit of service-learning characteristic of the NTNU education, the ever more competitive environment has called for professionalism and innovation as cultivated in good colleges and universities. Therefore, NTNU recognizes the need for an all-around educational approach with a dual focus on both character and expertise. A holistic education on the strength of the NTNU paradigm will be adopted to cultivate students in the five dimensions of education – character, intelligence, health, community, and aesthetics – and to development them into multi-disciplinary leaders.

2. A distinguished university celebrating diverse academic values

Some departments of NTNU also provide skill-oriented education; for instance, artwork exhibitions play an important role in art-related teaching and learning, an emphasis similar to concerts for music students, tournaments for sports-related department students, and innovation in technical study. This special facet of NTNU also gives rise to a different perspective on academic excellence. The pursuit of diverse academic values is thus crucial for NTNU itself and for the educational experience it delivers. Blessed with the proud tradition of the university, we are ready to set a prime example for academic diversity, which further completes student educational experience and the university's development.

3. An exemplar in university education innovations

Armed with a specialty in education, NTNU boasts a variety of professional

teaching faculty, positioned as per their expertise in the College of Education, College of Science, College of Technology, College of Music, College of Fine and Applied Arts, College of Sports and Recreation, College of Liberal Arts, College of International Studies and Education for Overseas Chinese, College of Management, and College of Social Sciences. The combination of outstanding teaching staff and a large quantity of alumni as experienced educators has made NTNU Taiwan's leading educational institution with full qualifications. However, in recent years, the focus has been on transforming the university to adapt to the changing environment of teacher education, instead of the integration of human resources in teaching. To do our part to contribute more to education in Taiwan, NTNU feels a need to renew our efforts, reinvent a great tradition, and become a new model and a forerunner as the education landscape evolves.

4. A stronghold to nurture future academic and research talents

Around the world, education, cultural creativity, and "green living" have gained more and more attention. If incorporated with technology, these fields will possess an even greater competitive edge, deriving a stronger demand for professionals. In addition, NTNU discovers that Taiwan has greater potential than other Chinese-speaking areas and countries, if we support the development in the above-mentioned fields with a fusion of traditional Taiwanese culture and international cultures. NTNU is in the perfect position to nurture future academic and research talents while developing paradigms to guide the Chinese community around the world in these fields.

III. SWOT Analysis

In the past, NTNU has prided itself with a long history and a continued dedication. NTNU also identifies its present pros and cons through the following SWOT analysis:

1. Strengths

(1) Colleges of NTNU in the lead

At present, NTNU's Colleges of Education, Sports and Recreation, Music, and Fine and Applied Arts all play a leading role in their respective fields in Taiwan. In the field of liberal arts study, NTNU has always been one of the nation's best. The College of Science also has a teaching faculty as good as the National Taiwan University, National Tsing Hua University, and National Chiao Tung University. As for the others, Colleges of Technology, Management, Social Sciences, and International Studies and Education for Overseas Chinese are still growing, but have begun to stand out in their own fields. It is believed that, through continuous advancement of current outperforming colleges and a strategy to integrate all college strengths, NTNU will carve of unique path in the future.

(2) A holistic approach with a balance between science and humanities

It has been the mission of NTNU to educate excellent educators. To that end, we have built our curriculum on the balanced development of students and an academic framework around the foundation subjects. This has led to NTNU's equally outstanding performance in both science and humanities: compared with professional/vocational universities (such as universities of arts or sports/physical education), NTNU has an edge in technology and science; compared with other comprehensive universities, NTNU excels in humanities and arts. The combined strength in both science and humanities further buttresses our holistic educational approach and a tradition of character cultivation. The NTNU students are thus able to develop well across the spectrum of education on character, intelligence, health, community, and aesthetics.

(3) Interdisciplinary learning and teaching

NTNU comprises colleges in a wide variety of disciplines, especially in liberal arts, fine arts, sports, and education. By effectively developing and incorporating liberal and fine arts with either science and technology or management, NTNU is able to offer interdisciplinary programs that cater to job market demands. In doing so, NTNU not only brings out more of its unique features, but also helps students to gain a more competitive edge in workforce. At present, the University offers 26 programs in different areas for interdisciplinary studies.

(4)　A distinguished roster of alumni

NTNU has an outstanding roll of alumni with significant contributions, many of whom dedicate themselves in teaching, management, and leading high schools. Up to now, NTNU has been home to 27 university presidents, 261 senior high school principals and 388 junior high school principals. In the advanced academic world, 7 of the nation's revered Academia Sinica Academicians (Tien-tzou Tsong, Yu-fa Chang, Paul Jen-kuei Li, Wen-Hwa Lee, Yue-hwa Pan, Ming-Chang Lin, and Hwang-cherng Gong) graduated from NTNU. The NTNU alumni also include several former or incumbent government agency heads (President of Legislative Yuan Jin-pyng Wang, Minister of Education Ching-ji Wu, Minister of the Sports Affairs Council Hsia-ling Tai, former President of the Examination Yuan Shui-the Hsu, former Minister of Education Wei-fan Kuo, late Minister of Education Ching-chiang Lin, former Minister of Education Chao-hsiang Yang, former Minister of the Sports Affairs Council, Li-Yun Chao, former Minister of the Sports Affairs Council I-hsiung Hsu, former Minister of Council for Cultural Affairs Yu-xiu Chen, former Minister of Mainland Affairs Council Kun-huei Huang), legislators, and business leaders (former Chairperson of the CPC Corporation Wenent Pan, Chairman of Compal Electronics Rock Hsu). In addition, many NTNU's alumni are also figures of distinction in arts and sports, an advantage for our strategic development in the cultural creativity industry. Such rich resources can be tapped to make an impact on the society. In addition to the lineup of distinguished alumni, NTNU will also provide career planning to current students and fresh graduates while fortifying the school itself, in hopes of nurturing more and more outstanding alumni in the future.

(5)　A privileged location

Sitting in the heart of Taipei city, NTNU's Hoping Campus is close to central government institutions (Presidential Office, Executive Yuan, and Legislative Yuan), major cultural arenas (National Central Library, Chiang Kai-shek Memorial Hall, National Theater and Concert Hall) as well as headquarters of renowned enterprises, with a distance of around 3 kilometers. The National Palace Museum, Taipei Fine Arts Museum, Museum of Contemporary Art Taipei, Huashan Creative Park, and Novel Hall for performing arts are all in an accessible 10-km range. The Hoping Campus also enjoys the proximity to two MRT stations (Guting and Taipower

Building) as well as trains stations of Taiwan Railways and High Speed Rail. The near-perfect location also appeals to job seekers and prospective students. Moreover, international students from more than 80 different countries mold an NTNU culture of multinational diversity, which also helps the university to develop an edge in sectors associated with education, cultural creativity, and "green living".

Gongguan Campus is not far from the National Taiwan University commercial area, and has great potential for development once the immediate neighborhood around Gongguan Campus becomes more convenient. Linkou Campus, on the other hand, situates in a relatively quiet area, which is expected to thrive after the Taoyuan International Airport MRT system is instated. Nevertheless, being quietly tucked away, Linkou Campus boasts a lush landscape fit for sports and recreation, as well as the perfect classroom for international studies and education for overseas Chinese.

(6) Well-developed on-campus electronic network systems

Fully-furnished with internet access, NTNU has ranked Taiwan's No. 3 in the Webometrics Ranking of World Universities. We have also constructed a wireless environment, fully-equipped electronic classroom environment, and a digital learning platform installed several years before. NTNU is also the first in Taiwan to offer open courseware materials. Electronic administration has proved effective in many ways: an NTNU student or faculty ID also functions as an MRT Easycard and a campus security pass; official documentation and attendance tracking systems have helped improved administrative efficiency; a single sign-on portal also enables safe and convenient service. The NTNU libraries tout a web environment with abundant electronic resources, and are on the way towards a digital library. The NTNU Voice over Internet Protocol (VoIP) platform is in place, too, offering better service at a lower cost.

(7) An international learning experience

NTNU's Department of English is one of the best of its kind, complete with an abundance of excellent faculty and English education resources. Combined with the presence of many international students from some 80 different countries, NTNU is able to provide students with a magnificent English learning environment. In a world of business globalization, many international firms have set up headquarters or branch

offices in Taiwan, while Taiwanese companies also seek to expand globally. Against this backdrop, there is a rising and pressing need for people with English proficiency.
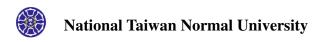
2. Weaknesses

NTNU's weaknesses are related to social changes and our departments/institutes or campuses as follows, which need to be addressed via strategic actions.

(1) A gap between student education (offered mostly in foundation subjects) and job market demand

The departments/institutes of NTNU used to be set up to address the need in teaching high schools. As a result, most faculties are built upon the disciplinary areas of foundation subjects, neither reflecting workforce demand of various industrial sectors nor preparing students to drive industrial development. To create a wider variety of career paths for students, it is thus important to establish functions that address industrial needs within NTNU's educational framework, through the combined efforts of those teaching staff conversant with industrial development trends and off-campus professional institutions. Curriculum and even organizational structure will be adjusted accordingly. In addition, the College of Management is urged to enhance fundamental management programs so that the NTNU students will have the opportunity to learn the basics of management and have some ideas about economics and cost. In doing so, we prepare students to be more adaptive and capable to work in the sectors relevant to their college majors so as to move towards a bright future.

(2) Limited space and outdated teaching resources

The NTNU campus has gone through a major expansion with the addition of the New Science Teaching Building, the top floor of the Zhengpu (Integrity and Modesty) Building, a building on Qingtian Street, and the structure renovated from the NTNU-affiliated kindergarten. However, still more research and teaching space is needed for both established and newly established departments/institutes and colleges. A gradual decrease in funding has also prevented teaching resources in several faculties from being updated or replenished. To address this issue, NTNU sees the

need to build new teaching buildings on all campuses to provide enough space, while accounting analysis and finance management will help to economize and increase funding at the same time to gradually enhance our teaching resources.

(3)   A lack of integrated use of resources to facilitate the University's transformation

In the process of NTNU's transformation, some of limited resources were often diverted to newly-added units or institutions. It is thus necessary to prioritize resource distribution to enhance our strengths and boost competitiveness by consolidating some units. Resources should also be provided to support research or creative teams to play a leading role in Asia, as NTNU thrives to outshine among global counterparts in several research areas.

(4)   Less attractive to academics than our counterparts

NTNU has an outstanding list of teaching faculty members to lead academic development. However, the changes both externally and internally in recent years have weakened our appeal to eminent academics, when compared to counterparts of the same level and quality. As the existing faculty moves closer and closer to the threshold of retirement, it is imperative to recruit a new generation of excellent faculty. In particular, for those traditionally-eminent colleges to maintain a leading edge, they need to recruit world-renowned professors, invite outstanding alumni in the academia, and cultivate promising young professors, so as to extend the current academic prominence further into the future.

(5)   Institutional inadequacy

Some institutional systems still need to be improved in terms of design or implementation to increase fairness and efficiency and to facilitate better performance among teachers and faculties. A good institutional system is one that supports the development of school affairs, giving impetus to improve and grow through systems of accounting, human resources, performance appraisal and assessment, and teaching faculty management, etc. To that end, it is crucial to form an expert panel of members from inside and outside NTNU, to review the institutional systems objectively and justly to help improve operational efficiency.
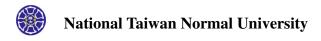
3. Opportunities

In the aftermath of the global financial crisis, the government in Taiwan has observed the adverse implications for the economy if relying solely on one industrial sector. Likewise, the academia has also recognized a need for colleges/universities to diversify. This complements and enhances the value of NTNU, which has a great opportunity to become a comprehensive university of distinctive features, as roughly outlined below:

(1) A general sense of urgency for transformation

In recent years, a declining birth rate and more educational programs in a wider range of universities have led to an over-supply of qualified teachers, barring students from a more stable payroll position or from employment at all. In recognition of this plight, students are encouraged to arm themselves with language skills, management and finance related knowledge, and a keen understanding of business trends to create more possibilities on their career paths. Students also take the initiative to compete for teaching jobs and sign up for various study programs, preparing themselves for employment ahead of graduation. There is now a consensus among the faculty and students that NTNU needs to go through a transformation, which will also transforms the stereotypical view that NTNU is no more than a teacher education university, into a new perspective that NTNU nurtures professionals of "sincerity, integrity, diligence, modesty" (the NTNU Motto) across various sectors.

(2) A common appreciation of modern citizens nurtured with an education in both science and art

In this developed economy, after decades of economic development and democratic progress, the society has grown to acknowledge the importance for a modern citizen to be nurtured with an education in both science and art: on one hand, to care about environmental protection and technological advances, and to be able to solve problems in daily life and work with the internet and computer, while, on the other hand, pursuing a quality life nourished by literature, art, music and recreational activities and respecting the laws and caring about the society. NTNU provides exactly the needed holistic cultivation in education, humanities, science, and arts for students.

(3) A growing emphasis on multi-disciplinary skills

Taiwan has become a service-intensive economy, where the public demand speed, innovation, value, and creativity for the products and services they get. Therefore, a need has risen for employees with multi-disciplinary skills. NTNU has put great stress on a learning experience across various subjects, with 26 interdisciplinary credit programs in place to prepare students for a society that values well-rounded skills.

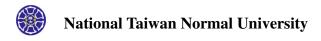(4) A government focus on education, cultural creativity, and service industries

Education has long been a key focus to the government. For instance, the basic education system has been extended from 9 years to 12 years. Policy incentives, such as those for continuing education and vocational training, have also been pledged to promote the development of education industry. Service industry in Taiwan has contributed to more than 70% of GDP, with highly dedicated efforts from the government. Furthermore, cultural creativity industry has become a national policy focus in recent years, spurred by government funding and support measures. In such a context, NTNU's strengths in education and cultural creativity present a great opportunity to thrive on.

(5) Increasing emphasis on employee character。

Since embezzlement and negligence affect a company with higher costs or even losses, enterprises have increasingly valued integrity and loyalty. NTNU has obliged itself to cultivate teachers of character and virtues as well as with professional competency. For us, character cultivation has been the fundamental work for the NTNU education approach, highly commended in the field of education and favored by companies in search of honest and virtuous employees.

(6) The greater role of further training in high school teachers' competency

Although high school teachers grow on years of teaching experiences, the changing society and fast-paced science development have given rise to a different set of values and ways of thinking among this generation of students. It is thus necessary for teachers to continue studying to meet this challenge. NTNU is in the perfect position to take advantage of this opportunity, providing excellent further training and study for high school teachers around Taiwan.

(7) More job opportunities for NTNU graduates as Taipei is service-intensive and home to business operations

Taipei City, a well-developed metropolis and home to the headquarters of many local and foreign enterprises, is a rich source of high-pay jobs and promising careers. The population of the greater Taipei (Taipei City and Taipei County combined) is about a quarter of the entire population of Taiwan. Northern Taiwan's flourishing service industry also means that our graduates have more and better job opportunities compared to those of central or southern Taiwan colleges/universities.
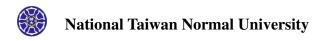
4. Threats

Social changes have presented a predicament to NTNU. On top of that, NTNU was absent from the funded list of the Ministry of Education's "Creating Top-notch Universities with NT$50 Billion over 5 Years Program", and the "University Education Excellence Program" subsidies were discontinued in the academic year of 2009. These have also dealt a blow to the image of NTNU. However, we have conducted analysis to identify the following threats:

(1) Low birth rates have reduced demand for high school teachers, dampening the employment outlook for NTNU graduates

Low fertility has led to fewer teaching jobs. At present, only a quarter of the NTNU students enter the teaching field after graduation. Therefore, NTNU has pledged to continue fostering student competitiveness in jobs aside from teaching. The faculties should take into account current trends and challenges of employment and find out how to create values associated more with industrial development. The teachers can encourage students to take 2 to 3 basic management courses so as to understand business operation and industrial competition. We can also facilitate the reinvention and transformation of the faculties, in collaboration with the business sector. On the other hand, in the education workplace where competition is also keen, it is equally important to foster "elite teachers" to meet future demand.

(2) An outdated stereotype that views NTNU as merely a high school teacher education institution

Teacher education is the stereotype many holds towards NTNU. The prevailing phenomenon of unemployed teachers also adds to the negative perception that the NTNU graduates might be employment-challenged. This also affects the recruitment and development of the university. How to revive the image and redefine the development direction is a pressing issue. We need an effective marketing effort to promote the concrete results and value of NTNU and to bust the myths. We should also form a consensus among our teachers and students. To unite the university together, the project of "the NTNU interdependent community" is set as the primary strategy.

(3) False impression of a conservative culture with insufficient appeal to outstanding students

Young students usually prefer a campus culture of vitality and variety. NTNU's practical and honest approach has often been mistakenly interpreted as conservative and inflexible. Such stereotype has led some outstanding high school graduates to choose other universities over NTNU, which in the long run may lower our overall student quality.

(4) Difficulty of funding after exclusion from the list of research universities

The Ministry of Education (MOE) failed to recognize NTNU as one of the research universities. This has sent out the wrong message that NTNU does not have enough research momentum, putting the University at a disadvantage when vying for large-scale research funding. What is more, we have thus lost a few teachers, who have remarkable research achievements, to other universities, and lack the kind of competitive edge that would attract new and promising teachers.

(5) Weak connections with the business world, hence the lack of large-scale funding

Most of the NTNU alumni work in schools, instead of enterprises. The weak linkages between NTNU and the business world have translated into difficulties in raising large funds or boosting the university endowment to help school affairs development.

(6) New faculties still largely unknown to prospects and employers

NTNU has diversified the structure by setting up many new departments, institutes and colleges, a move in line with the development of the country and society. However, being newly installed, they still need to work on brand awareness to increase student enrollment and help graduates to seek and land jobs.

SWOT Analysis of NTNU

Strengths	*Weaknesses*
1. Most colleges as leaders in Taiwan 2. A holistic approach with a balance between science and humanities 3. Interdisciplinary learning and teaching 4. A distinguished roster of alumni 5. A privileged location 6. Well-developed on-campus electronic network systems 7. An international learning experience	1. A gap between student education (offered mostly in foundation subjects) and job market demand 2. Limited space and outdated teaching resources 3. A lack of integrated use of resources to facilitate the university's transformation 4. Less attractive to academics than our counterparts 5. Institutional inadequacy
Opportunities	*Threats*
1. A general sense of urgency for transformation 2. A common appreciation of modern citizens nurtured with an education in both science and art 3. A growing emphasis on multi-disciplinary skills 4. A government focus on education, cultural creativity, and service industries 5. Increasing emphasis on employee character 6. The greater role of further training in high school teachers' competency 7. More job opportunities for NTNU graduates as Taipei is service-intensive and home to business operations	1. Low birth rates have reduced demand for high school teachers, dampening the employment outlook for NTNU graduates 2. An outdated stereotype that views NTNU as merely a high school teacher education institution 3. False impression of a conservative culture with insufficient appeal to outstanding students 4. More difficulties in funding after excluded from the list of research universities 5. Weak connections with the business world, hence the lack of large-scale funding 6. New institutions still largely unknown to prospects and employers

IV. Goal and Positioning

Based on the SWOT analysis, NTNU has set out the goal to become a "comprehensive university, modeled on the spirit of being teachers' teachers, standing out with the integrated development in humanities, arts, and science". In addition, NTNU will excel on its dual commitments of teaching and research, and engage with business in cooperation. We aspire to cultivate and nurture future leaders with a holistic approach and multi-disciplinary competence.

V. Key Focuses for Future Development

Focus 1: Promote holistic education

A balanced development through nurturing mind, body, and soul, and cultivating knowledge and character have been one of NTNU's key visions. The university motto also embodies how we educate students to "treat people with sincerity, discipline oneself with integrity, study with diligence and behave in modesty." Applying a holistic educational approach, we hope to foster the right philosophy of life and values and to facilitate a rich life experience, for students to become a "whole person".

1. Vision

(1) With a holistic educational approach, NTNU is to become a university exemplar in research and development.

(2) Enhance student counseling and character education with a balance between professionalism and moral literacy.

(3) Encourage volunteer participation and service-learning.

(4) Promote wellness and energy; develop into a stronghold in promoting health, counseling, and physical fitness.

2. Strategies

(1) With a holistic educational approach, become a university exemplar in research and development.

   a. Set up a unique and integrated electronic system to record and archive students' performance. Promotions and incentives will be provided. A complete record

will be made for all learning experiences and achievements, which can be used to buttress advanced study or job applications.

b. Train "seeded learners":

We will train 50 seeded learners each year to participate in system tests, competency exams, extracurricular activities, career planning, and sessions for good habit forming. Regular seminars will be held to review and analyze students' learning experience. "Seeded learners" will also help promote the usage of the e-learning system.

c. Hold and promote activities in the five education dimensions: character, intelligence, health, community, and aesthetics:

Administration will coordinate the available resources to hold activities based on the five education dimensions: character, intelligence, health, community, and aesthetics, and encourage student participation to develop well in all five dimensions.

d. Implement the "student club/society expert" initiative:

Part of the initiative is to assist and encourage students to join clubs and societies. This is believed to nurture the development of mind/body/soul, help discover personal interests, and increase competitiveness in workforce.

(2) Enhance student counseling and character education with a balance between professionalism and moral literacy.
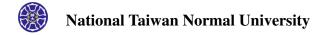
a. Moral education program:

Shape the character of students via orientations, instructor-student events, speeches, weekly assembly, student club activities, student organization, etc., under the framework of the "moral education program".

b. Workshop on moral education:

Invite experts, scholars, and moral educators to share their experience in a series of workshops to provide a deep understanding of the contemporary perspectives and developments of moral education, and, in doing so, help the workshop staff better grasp the above mentioned program and to apply their professional knowledge and skills.

(3) Encourage volunteer participation and service-learning.

a. Provide service-learning courses; improve the quality of citizens; fulfill accountable citizenship:

The service-learning courses can be offered in 3 types with the following aims:

(i) help students learn more about their departments and build relations between teacher and student; (ii) encourage students to care about the campus environment, thus creating a friendly campus, and to care further about the society and do their parts to serve the society; (iii) foster core competencies and competitive edges in the process of providing professional services.

b. Reinforce professional service-related knowledge and skills among students and teachers:

Organize promotions and talent shows of service-learning courses, including teachers' seminars, experience sharing, promotions and explanatory sessions, teaching assistant (TA) trainings, courses on service-related knowledge and skills, talent shows and award presentations. This will help reinforce service ethics and service skills, an embodiment of the reciprocal service-learning process.

c. Service-learning in student clubs/societies:

Encourage students to participate in service activities, including regular ones or those during the summer/winter vacations, after-school academic help programs in remote areas, international volunteering, etc. Service-learning courses will be launched to teach students to "learn by doing", and reinforce learning effectiveness via reflections and reviews.

(4) Promote wellness and energy; develop into a stronghold in promoting health, counseling, and physical fitness.

a. Continue to develop NTNU into a "wellness promoting school":

Hold health education and promotion events by incorporating school and community resources, provide health services to the NTNU faculty and students, create a healthy campus environment, instill better health-related knowledge and skills in faculty and students, and improve the wellness of students, faculty, family, and community.

b. "Raising Emotional Quotient" project:

Set up service teams (dubbed "Rest Area for Your Mind") in dorms and among peers, continue to provide individual counseling and self-growth events, release a regular publication on counseling, in order to help students grow and mature and become a "whole person".

c. "Healthy living environment":

Create a good living environment in student residence halls, help students to form regular habits of exercise and lead a healthy life.

d. "Gender equality education":

Create a non-discriminative learning environment to put into practice the concept of gender equality across the university, develop awareness and consciousness of gender equality on campus, promote gender equality education, and engage gender-equal teacher-student interactions.

e. Physical fitness:

Reinforce the physical fitness center on campus, conduct comprehensive checks and tests on students' physical fitness, and help students form good habits of regular exercise.

Focus 2: Foster interdisciplinary education for better competitiveness

Faced with the challenge of increasing globalization, NTNU will build on its existing edge as a professional teacher education institution, and provide a comprehensive curriculum and a full range of study programs via resource integrations. We will also provide internship or co-op opportunities, to cultivate professional talents of a global view and multidisciplinary expertise.

1. Vision

(1) Foster students' global vision and compete favorably on the international stage.
(2) Adjust the organizational framework of academic institutions with a focus to reinforce teaching resource integration.
(3) Reform the curriculum to improve quality of teaching.
(4) Implement internship or co-op programs to give students a better edge in job market.

2. Strategies

(1) Develop students' global vision and compete favorably on the international stage.
　　a. Better foreign language competence:
　　　(i) Prescribe the minimum foreign language exam levels before graduation. Those who fail to meet the requirement will receive remedy lessons.
　　　(ii) Integrate and provide foreign language courses, encourage students to learn a second foreign language and help them pass competency exams.
　　　(iii) Build more language labs.
　　b. Offer degree programs taught in English:
　　　(i) Give incentives to encourage colleges and departments/institutes to provide all-English degree/non-degree programs.
　　　(ii) Prefer to recruit new teachers who are able to teach in English.
　　　(iii) Cooperate with universities abroad to offer join degree programs on cross-cultural issues with a "global dimension" (including citizenship, conflict resolution, diversity, equality, sustainability, etc.).
　　c. Select students for overseas internships:
　　　(i) Sign cooperation agreements with advanced or promising enterprises or institutions.
　　　(ii) Set up a system of recommendation, selection, and application.

(2) Adjust the organizational framework of academic institutions with a focus to reinforce teaching resource integration.

   a. Restructuring:

   (i) Reinforce the coordination and integration of college-based teaching resources.

   (ii) Merge or expand the institutions, taking into account the government's human resource development policies, what the society needs, and how we can marshal the teaching resources.

   b. Encourage more interdisciplinary programs to be in place, to reflect the needs and trends of the society:

   (i) Combine and integrate resources of departments, institutes, degree/non-degree programs, centers, and research projects to devise and deliver interdisciplinary programs.

   (ii) Use such programs to win more resources, collaborate with enterprises, and develop the featured strengths of NTNU.

(3) Reform the curriculum to improve teaching quality.

   a. Curriculum reform:

   (i) Reconstruct the professional courses in the curriculum based on students' future career path options.

   (ii) Draw curriculum maps of different faculties for students' information.

   b. Set up an exchange platform for teaching ideas and boost creative teaching:

   (i) Choose key approaches to teaching.

   (ii) Have pedagogy workshops with experimental sessions for pedagogical research.

   (iii) Digitize the innovative approaches and upload to the NTNU digital teaching platform.

   c. Establish a comprehensive "selection-training-assessment" TA system:

   (i) Set up a TA training system of diversity

   (ii) Develop questionnaires to regularly review the performance of TAs.

(4) Implement internship or co-op programs to give students a better edge in job market.

   a. Internship programs both at home and abroad:

   (i) Build up a database of enterprises with internship opportunities: interact and communicate actively with domestic enterprises and construct an information database for better quality and effectiveness of an internship experience.

   (ii) Expand the scope of job fair: Add a new category, "internship programs both

at home and abroad", to NTNU's annual job fair, making it an "internship fair" at the same time.

b. Invite experienced professionals to teach:

(i) Invite seasoned business professionals with expertise to share their experience in the "resident expert lecture series".

(ii) Invite business professionals to serve as "business mentors" in respective departments/institutes, to answer students' questions about career planning, so that students will understand more about the workforce, think about their future, and prepare ahead for employment.

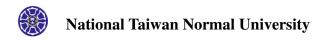## Focus 3: Nurture professional teachers of quality and character

NTNU has a legacy of fostering elite teachers. In the following 5 years, we will emphasize on character education, fortify their capability in serving and execution, and improve professional knowledge and skills. Cultivating professional, excellent and innovative high school teachers is our main objective. Meanwhile, we will also deepen the partnership with schools that provide internship opportunities, join our efforts to help teachers develop professionally, and carry on with the teacher education empowerment project to drive the innovations and development of teacher education around the world.

1. Vision

(1) Cultivate professional, excellent, innovative high school teachers and become a designated key university of teacher education in Taiwan (with a high level of support by the Ministry of Education).

(2) Empower high school teachers with master's study.

(3) Provide assistance and guidance for teacher-candidate students during practicum and deepen the partnership with schools that provide internship opportunities.

(4) Promote in-job training and professional competence development.

(5) Play a leading role in the reforms and innovations of the nation's teacher education policies and practice.

2. Strategies

(1) Cultivate professional, excellent, innovative high school teachers and become a designated key university of teacher education in Taiwan.

a. Stronger emphasis on character cultivation of teacher-candidate students:

With a holistic educational approach, engage teacher-candidate students in activities related to character cultivation, volunteering, or service-learning. Whether a teacher-candidate is of good character will also be part of the selection criteria.

b. Devise a mechanism to select and guide elite teacher education:

With a holistic educational approach, an advancement program for teacher education will be devised. For teacher-candidate students, the existing mechanism of selection will be revised and a comprehensive help mechanism will be in place. In line with the MOE's teacher education excellence program, NTNU will strive for the MOE's support for teacher education scholarships

and the development of designated key universities of teacher education.

c. Develop a personality test for teacher candidates:

Ask those departments/units with related expertise to develop a tool for personality test, to be used as a selection criterion.

d. Set up an operating system to track students' training process:

An operating system is mulled to create files for teacher-candidate students, to register a second academic expertise, and to track their career after graduation, while a complete database will also be constructed.

(2) Empower high school teachers with master's study:

a. Continue to provide the in-job training master's programs for high school teachers:

In-job training master's programs for high school teachers are offered so as to improve professional knowledge and skills of incumbent teachers and equip them with a master's degree.

b. Nurture master's degree-holding high school teachers in several disciplines:

A project is formulated to nurture elite teachers holding a master's degree before teaching, by incorporating the existing selection processes for teacher-candidate undergraduates, early admission master's program applicants, and master's program applicants for admission on recommendation/selection.

(3) Provide assistance and guidance for teacher-candidate students during practicum and deepen the partnership with schools that provide internship opportunities.

a. Select excellent cooperating institutions and teachers for the teaching practicum while reforming the mechanism of teaching practicum:

Based on the MOE's projects to certify excellent cooperating institutions and teachers for the teaching practicum, under the program to improve the quality of primary and secondary school teachers, NTNU will develop indicators of professional education institutions to guide our selection of cooperating institutions and teachers for practicum.

b. Hold activities to facilitate expertise and improve competence, and encourage teacher-candidate students to teach in remote areas or overseas:

Organize activities that will help teacher students to grow their expertise; encourage teacher-candidate students to sign up for practicum in mountain areas, off-shore islands, and even overseas-Taiwanese schools, like the MOE's program for college-student teachers to teach in underprivileged areas in honor of both the spirit of humanitarian physician Albert Schweitzer and the

objective of NTNU's service-learning program.

   c. Start websites for digital monitoring and learning resources of the practicum:

     Establish a standardized process for practicum to give assignments or assess the student teachers' performance, and build a website to provide digital learning resources that assists the teaching practice.

(4) Promote in-job training and professional competence development.

   a. Construct a web platform for advanced study and idea exchanges for high school teachers:

     Design and build a platform to enable e-learning and form online learning communities for high school teachers

   b. Promote the research on curriculum planning and expertise development for high school teachers' in-job training:

     Promote the research on the curriculum planning for high school teachers' in-job training, while providing systemic, advanced, and diverse study for them; organize teacher communities of respective expertise in subject matter pedagogy to assist expertise development of incumbent teachers.

   c. Tap into the local teaching resources in support of the expertise development of teachers in remote and aborigine schools:

     Apply NTNU's local education assistance function to give a helping hand to teachers in remote and aborigine schools, and to support them in improving expertise.

(5) Play a leading role in the reforms and innovations of the nation's teacher education policies and practice.

   a. Continue with the innovative teaching program for teacher education:

     Implement NTNU's teacher education programs associated with institution/system, curriculum, teaching, and innovations, and the innovative teaching program for teacher education.

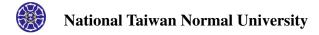## Focus 4: Implement performance evaluation, feedback, and incentive mechanism to spur professionalism

Though an assortment of performance appraisals have been in place, they are not actively followed up by a feedback mechanism. Therefore, NTNU aims at implementing a fair and objective support and incentive system based on the results of appraisals, in order to boost academic performance on all fronts, transforming NTNU into a first-rated university.

1. Vision

(1) Institutionalize the performance evaluation systems and incorporate with information technology, so as to effectuate the reward/punishment function.
(2) Give incentives based on the performance appraisals to create a fair mechanism of feedback, which will drive the all-around improvement of NTNU to become a first-rated university.

2. Strategies

(1) Institutionalize the performance evaluation systems and incorporate with information technology, so as to effectuate the reward/punishment function.
  a. Set up a "scoring system for academic performance of the teaching faculty":
    Currently, teachers in different faculties are evaluated as per the respective guidelines of the faculty, with a distinct disparity in terms of how research performance is rated. The proposed "scoring system for academic performance of the teaching faculty" will provide uniform standards for research performance evaluation, which is not only more institutionalized but also fair and objective.
  b. Implement a uniform teacher evaluation process across the campuses:
    Eliminate the discrepancy among teacher evaluation processes and implement a uniform one instead, which will make the process more prudent and accurate.
  c. Set up a "performance management system for departments/institutes":
    We have learned from many sets of performance indicators designed by different universities in Taiwan, and will formulate NTNU's own "performance management system for departments/institutes". It is aimed to improve the quality and effectiveness of teaching, research, and administration by allowing the departments/institutes to evaluate their own performance with an institutionalized, IT-incorporated mechanism.

d. Perform regular self-evaluations on teaching and research units (i.e. departments/institutes and centers):

The approach, content, and schedule of self-evaluation will be administered by the "NTNU committee of performance evaluation". The evaluation is proposed to be carried out every 3 to 6 years, to improve effectiveness and development of NTNU's teaching and research units (i.e. departments, institutes and centers).

e. Invite scholars and experts from outside NTNU to sit on the "NTNU committee of performance evaluation" to make the fullest of its role:

Involve the outside scholars and experts more in the committee work, and introduce the concept of diversified appraisal with the involvement of external members, thus making the appraisals more credible and trustworthy.

(2) Give incentives based on the performance appraisals to create a fair mechanism of feedback, which will drive the all-around improvement of NTNU to become a first-rated university.

a. Reward teachers based on the results of the "scoring system for academic performance of the teaching faculty":

Financial rewards will be given to those score high in the scoring system for academic performance. Assistance and elimination will be applied to stimulate underperforming teachers for further improvement.

b. Use the results of the "performance management system for departments/institutes" to allocate resources such as human capital, space, and funding:

A set of quantitative indicators will be used to assess how a department or institute develops, which is believed to help the department/institute review and rectify itself accordingly and regularly. The results will also be used as a reference to marshal the resources (human capital, space, funding, etc.), modify mid- and long-term plans, and adjust the organization structure.

c. Conduct annual budget and cost benefit analyses on NTNU's centers:

The centers will be put to regular review through annual budget and cost benefit analyses. The reports will be sent to the "NTNU committee of performance evaluation" for members to understand the operation and issues of each center and to facilitate improvement or assistance measures if needed.

Focus 5: Build up first-rated research teams towards international prominence

We hope to build, on the foundation of our strong features and in the direction of future industrial development, research teams capable of conducting world-class research and development projects. In addition to double power of research projects and academic journal publication in greater quantity and of better quality, NTNU will endeavor to translate the results of researches into momentum in industry-university collaboration.

1. Vision

(1) Support research teams of great potential and in line with the future direction of industrial development.

(2) Utilize the NTNU endowment funds to develop key areas and bring up the level of academic research performance.

(3) Improve and increase NTNU human resources in research, and strive to double the results of researches.

(4) Develop NTNU's advantageous key technology to be industrialized, and double the momentum of collaboration between industry and university.

2. Strategies

(1) Support research teams of great potential and in line with the future direction of industrial development.

    a. Facilitate world-class research and development projects:

      Based on the university's strong features and the direction of future industrial development, we seek to begin with an emphasis on NTNU's own interdisciplinary or cross-departmental large-scale collaborated research projects, and move on to develop world-class research and development ones, in order to increase publicity and academic influences of NTNU.

    b. Support integrated cross-departmental research or creative teams with the ability to obtain external resources:

      Support integrated research projects born from interdisciplinary or cross-departmental collaboration, and cultivate research teams that are able to vie for more external resources for NTNU.

    c. Establish a system with flexible remunerations to recruit excellent teachers, including world-class figures:

Design a flexible recruitment and salary system to attract distinguished teachers to NTNU and thus elevate research performance in quantity and quality.

(2) Utilize the NTNU endowment funds to develop key areas and bring up the level of academic research performance.

Moving forward in the same direction of government's future key areas of industrial development (e.g. cultural creativity, education, technology), NTNU will inject its endowment funds more and more each year into promising research projects to take the academic research performance further in a great leap.

(3) Improve and increase NTNU human resources in research, and strive to double the results of researches.

a. Double the number of government research projects:

Hold seminars or workshops and provide subsidies to aid or encourage teachers to apply for government research projects with the proposals improved in quality and quantity

b. Double the momentum to pursue publication in important academic journals:

Continue to support or reward publication in prominent academic journals, assisting NTNU teachers to submit their works to international academic journals, with an aim to prod future output of academic publication.

c. Increase the significance of NTNU's academic journals:

Strive to rank NTNU's academic journals among the acclaimed journal lists of SCI, SSCI, A&HCI, TSSCI, THCI Core, etc.

(4) Develop NTNU's advantageous key technology to be industrialized, and double the momentum of collaboration between industry and university.

a. Integrate resources of the university and set up a service platform to facilitate industry-university collaboration:

Provide teachers with opportunities to work with the business world through promotions and incentives for industry-university collaboration; learn from collaborative successes and integrate school resources to establish a service platform (including exclusive websites and manuals), which also gives the industrial sector an idea of NTNU's advisory and research services.

b. Promote interactions with the industrial sector to win more opportunities for collaboration and cooperation:

Set up collaborated centers (e.g. biotech centers) to reinforce the interactions between industries and NTNU as well as lay the groundwork for future

cooperation.

c. Hire new management teams to reinvent the incubator center and formulate a new set of operational principles

The transformed incubator center will be built on the advantageous features of NTNU (e.g. cultural activity), supported by the professional teaching faculty. We will actively make new proposals to vie for government funding, while offering value-added and profit-making services to meet the needs of local enterprises. At the same time, such a center also opens a door to more employment opportunities for NTNU graduates and to give them a competitive edge in job-hunting.

Focus 6: Enhance international cooperation, reaching out from department/institute/college levels

The aim is for every NTNU department/institute/college to each participate in one international cooperation program, putting international exchanges into action. Moreover, we may draw support from our foreign alumni to promote NTNU with their influence so that the NTNU campus will become a genuinely cosmopolitan one with a lineup of international recruits.

1. Vision

(1) Encourage every department/institute/college of NTNU to each engage in one international cooperation program.

(2) Launch the international summer school programs by incorporating the academic and research resources.

(3) Construct residence buildings for international students and visiting scholars.

(4) Organize an alumni association of international students, which may in turn help recruit students overseas.

2. Strategies

(1) Encourage every department/institute/college of NTNU to each engage in one international cooperation program.

    a. Subsidize international cooperation to encourage completion of agreements with foreign academic institution:

    Stipulate rules for subsidizing international cooperation. Funds are set aside to subsidize cooperative initiatives by the departments/institutes/colleges in line with their respective development goals, and to facilitate teacher and student exchanges, joint degree programs, collaborated research or teaching, visiting students, summer study, internship, etc.

    b. Offer scholarships to prospective international students and encourage recruiting from foreign countries:

    Scholarships are assigned in proportion to the percentage of international students in individual departments/institutes/colleges, to attract overseas prospects.

    c. Select and subsidize students cum laude for overseas study:

    The top 4 new recruits of the freshmen class will be subsidized to study for one

semester/term in one of NTNU's sister universities before graduation. Students who are "study award" winners (achieving high academic distinction in the previous semester) may be first considered to join subsidized language and culture study groups in one of the sister universities.

(2) Launch the international summer school programs by incorporating the academic and research resources.

a. Offer English-taught summer classes:

Encourage faculties to invite foreign scholars to give English-taught classes in summer sessions and promote such classes to both local and international students.

b. Start preparatory Chinese-study summer courses for international students.

Resources of faculties related to Chinese teaching will be integrated to facilitate preparatory Chinese-study summer courses for degree-pursuing international students, exchange students, and visiting students.

(3) Construct residence buildings for international students and visiting scholars.

a. Residence halls for international students:

International students will be arranged to stay with local students to mingle and bond. A counseling mechanism will also be installed for international students.

b. Housing and lodging for foreign scholars:

To present a good image of NTNU to its friends overseas, quality lodgment will be provided to foreign teachers, exchange teachers, visiting scholars, and visiting foreign guests.

(4) Organize an alumni association of international students, which may in turn help recruit students overseas.

a. Set up an international alumni database:

Organize and regularly convene an international alumni association, which, through exchanges and other activities, will reinforce cooperation and connections among alumni.

b. Establish an overseas office:

In a cooperative move with NTNU's sister universities and alumni, an overseas office will be established to promote NTNU and recruit outstanding students from the prominent high schools.

c. Encourage Chinese-learning students to pursue degrees:

Information sessions and interviews for recruitment will be offered in the Mandarin Training Center to answer questions and encourage students to continue to pursue degrees in NTNU.

Focus 7: Construct a U-campus with quality digital service

In recent years, information technology and equipment, and system and service have all continued to move forward from digitization to information, from mobile to ubiquitous presence. Looking to the future, NTNU will also plan and develop its resources and services for learning, research, administration, and campus life as aligned with the above trend, while taking into account energy conservation, carbon mitigation, privacy and security.

1. Vision

(1) Provide convenient service on U-campus.

(2) Construct a ubiquitous learning environment for better learning quality.

(3) Establish a digital library to provide value added service.

(4) Promote green information technology and build a service-oriented cloud center.

2. Strategies

(1) Provide convenient service on U-campus

    a. Construct a campus-wide intelligent card system:

        The NTNU intelligent card can be used for documentation applications, classroom reservations, class roll calls, event sign-up or check-in, security check, and dormitory air-conditioning usage. Its service scope also extends to enabling payment at neighboring NTNU-partner stores, NTNU campus general stores, and student cafeteria. Through a ubiquitous presence of intelligent card usage, we can fulfill the vision that one card facilitates all aspects of campus life.

    b. Set up information kiosks across the campuses:

        Information kiosks will be installed at popular spots and dining areas on campus. With Thin-Client computers and the wired/wireless environment, services such as web surfing, campus events introduction, file transfer, personal scheduler, fee payment records, and inquiry about and printing of course registration and scores are all available.

    c. Optimize wireless internet access to provide ubiquitous internet access:

        Upgrade and increase wireless bandwidth in areas where internet access is crucial in order to enable readily accessible and secure wireless service.

(2) Construct a ubiquitous learning environment for better learning quality.

    a. Establish online university platform with e-learning:

Expand the digital learning platform further with more functions, reinforce online courses and distance learning, and provide a virtual system to manage personal files, such as course content, e-textbook, notes, and learning records. Therefore, teachers and students will be able to access their teaching/learning files anywhere, anytime. This will lead us closer and closer to the realization of the concept of a web-based university, which delivers a better learning experience and reinforces the infrastructure for NTNU to cooperate with its counterparts around the world.

b. Build up an e-academy allowing videos and audios and develop open courses:

Set up a learning service system with video/audio streaming, so that recordings, lectures, and speeches can be served on the system. There will be no need to worry about missing an important speech since online viewing of key events and activities will be available. NTNU wants to lead the nation in open courses and thus boost its visibility in the academia.

c. Upgrade and expand a ubiquitous internet environment:

Upgrade and expand the NTNU campus network to support a ubiquitous learning environment. In addition, with increased bandwidth for external web connections, faculty and students alike will be able to attain useful information at a faster speed and share their research and teaching ideas on the Taiwan Academic Network (TANet).

(3) Establish a digital library to provide value added service.

a. Support researches with faculty-featured collections:

Analyze keywords more relevant to the study of each faculty to develop query systems and a list of related publications and e-resources. Utilize infometric approaches such as citation analysis to review the current collections of each faculty/discipline, in an attempt to build professional and faculty-featured collections as well as related web-pages, in support of current and future development of faculties and subject groups.

b. Set up an Institutional Repository database to market NTNU's research achievements:

Develop the Institutional Repository system that marshals resources, such as teachers' journal articles, seminar papers, research reports, art and music works, and special-themed books, in one database. The system will also include scanned files of past academic journals. Combined with the existing system of master's and doctoral theses system, an NTNU Institutional Repository will be set up to provide Open Access Resources in collaboration with other libraries

at home and abroad, and to promote NTNU research achievements.

   c. Publish books, multimedia, and value-added products, under the brand name of NTNU:

Publish book series that reflect the features and expertise of NTNU. Value-added products can also be designed to promote NTNU's art and music masterpieces more creatively. Set up physical and virtual channels to market these products and the NTNU brand name.

(4) Promote green information technology and build a service-oriented cloud center.

   a. Virtualize IT equipment and save both hardware and software resources:

Reorganize the server and storage system for school affairs, and utilize virtual technology to integrate different applications to one physical mainframe. Higher utilization rate of hardware resources will not only save the cost of more hardware purchases and maintenance, but also conserves energy and reduce carbon emissions.

   b. Set up a campus information service platform by applying software and hardware resource in a flexible way:

In recognition of the concept of teamwork and shared resources, we intend to build a centralized but flexible resource management platform by harnessing, allocating, and managing resources dynamically. Key applications will be moved to the cloud service platform, enabling automated dynamic resource allocation and business continuity.

   c. Integrate the information services associated with school affairs and streamline administrative procedures:

Reorganize the information structure for school affairs, set up a single sign-on mechanism with simultaneous account management, and complete a common information platform to enable system convergence, information sharing, information storage, and information retrieval. Built in a high-speed internet environment, the platform will be able to provide service in great mobility and accessibility, and further integrate horizontally all the administrative applications and business information. We can thus streamline administrative procedures, reduce the waste of time, and improves administration efficiency.

Focus 8: Develop a campus of artistic richness and sustainable ecology

NTNU boasts a distinction in art and culture. This has been one of the unique assets of NTNU, just as many world-famous universities attract students and visitors with their artistic and culture-rich environment. We also recognize the current trend to respect ecological and environmental protection; as a result, we have chosen to develop our campus on two main concepts: artistic grace and ecological sustainability. We will build our campus into one that reflects the culture and technology aspects of community, urban, and global features, by taking advantage of a privileged location, and characteristic architecture, landscape, and environment.

1. Vision

(1) Develop the university campus into a cultural park.
(2) Create a greater NTNU-community of learning and living.
(3) Build a sustainable campus that fulfills the criteria of a green university.

2. Strategies

(1) Develop the university campus into a cultural park.
    a. The eco-museum project:

        With a long-standing history, the NTNU campus houses many historical monuments and buildings, and provides open space of historic significance. Furthermore, we can investigate important literature and artifacts that reflect the history of NTNU. The goal is to create a space where the campus is the museum, i.e. to make the NTNU campus an eco-museum.

        Create resource references to facilitate the investigation, research, maintenance, usage, and guiding tours to exhibitions of the historical architecture and artifacts of NTNU. Produce files and records for valuable artifacts and set up LCD touch screens in city historical monuments to construct a comprehensive electronic guiding system (See the boldface on p.19 of the Campus Development Plan Appendix).

    b. Cultural axis project:

        Turn the major pathway axis into an art boulevard. In addition, create a treasure map for the traces of masters and celebrities, including places of historical significance, or corners representative of their life on the campus.

With the project, we can also tell the stories of NTNU celebrities with image and words; the campus is like a picture book, whose pages give clues to the life on campus of these celebrities, such as where they had treaded, stayed, or worked.

c. Artistic landscape project:

Infuse the campus landscape with culture, art, and technology, and form an artistic axis connecting dots of meaningful locations and space. The project has 3 key focuses: (1) art for the public (2) art for ecology (3) art for exhibitions. In more detail, we plan to install many works of public art to highlight an artistic campus, decorating the public campus space as painting on the canvas. Also, we will use plantation art to create a graceful landscape on campus. A variety of exhibitions of visual arts, performing arts, video and audio arts, digital arts, and art markets will take place too. The sub-projects will address campus public art, campus landscaping art, and campus exhibition space (See the boldface on p.20 and p.21 of the Campus Development Plan Appendix).

d. The Liang Shiqiu house and museum project:

Renovate the home of the iconic writer Liang Shiqiu, present Liang Shiqiu's artifacts, writings as well as history associated with NTNU, and bring back the elegance of the place where a great writer once lived (See the boldface on p.18 of the Campus Development Plan Appendix).

(2) Create a greater NTNU-community of learning and living

a. Create a community-like campus, and incorporate the community into the campus:

Step by step, open the campus up to be more and more integrated with the neighborhood, and offer courses and activities about environmental sustainability.

b. Shape the campus and neighborhood into a characteristic university town:

Promote coexistence and interdependence between NTNU and its neighborhood to build a university town of living, teaching and recreation (See the boldface on p.19 and p.21 of the Campus Development Plan Appendix).

c. Dynamic and interactive campus of a multinational cultural appeal:

Develop an environment that facilitates teaching, research, and living for people from different countries, and create a hub of cultural exchanges (See the boldface on p.21 of the Campus Development Plan Appendix).

d. NTNU as the core of the greater community:

The NTNU campus is where one can learn, study, live and have fun. The neighboring community further extends such convenience and variety. The NTNU campus can tap that potential to become the core of a greater community.

(3) Build a sustainable campus that fulfills the criteria of a green university.

a. Promote alliance between domestic and foreign green universities:

Reinforce the operation of the committee of the green initiative of universities, establish an office of campus sustainability, participate in the local and international green university networks, carry out the action strategies stated in an international declaration on green university, and ensure campus sustainability on all fronts.

b. Promote coexistence between building and environment:

Newly-built and renovated structure will be guided by the concepts of art and ecology. The landscaping of open space also follows the principles of eco-sustainable design and easy accessibility. We will also promote ecological teaching, research, and the coexistence between living space and the natural environment (See the boldface on p.20 of the Campus Development Plan Appendix).

c. Nurture an environment of "ecological greening" and play a leading role in sustainability:

Build the environment with bio-diversity and a greater ratio of green cover for NTNU to become an exemplar in sustainable development and green universities.

d. Bridge green universities with green communities:

Introduce the ideas of green universities to the community level; hold activities and promote energy conservation and resource recycling.

e. Improve campus landscaping and architecture and environment planning, while promoting the construction of green buildings:

Improve the quality of landscaping across all campuses. Require the planning and construction of buildings and their surroundings to comply with the standards for green building certification as well as the following 9 green building indicators: biodiversity, greening, water conservation, energy efficiency, carbon mitigation, waste reduction, water resources, sewage and garbage problem solution, and indoor environment and healthy living.

f. Utilize modern technology:

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Use a sufficient amount of solar panels, and build electricity monitoring, energy smart lighting, and campus internet communication and video conferencing.

Focus 9: Embark on administrative reforms and re-engineering

Through administrative reforms and re-engineering, we strive to construct a flexible, effective, and innovative organization equipped with excellent administration and staff. We also hope to develop a knowledge-based and service-oriented administrative organization by actively tapping into social resources.

1. Vision

(1) A flexible organization to boost university competitiveness.

(2) Appropriate administrative procedures to improve operational effectiveness.

(3) Excellent university marketing by making optimal use of social resources.

2. Strategies

(1) A flexible organization to boost university competitiveness.

a. Restructuring to arrange reasonable human resource allocation:

(i) Streamline administrative organization.

(ii) A reasonable allocation of human resources in academic and administrative units

b. Self-sustainable operation and obtainable funding:

(i) Develop the unique features of NTNU centers to actively obtain project support and funding.

(ii) Perform regular assessments of operation effectiveness of the NTNU centers.

c. Improve school operation performance by introducing professional managers:

(i) Define the businesses and units that are related to or in charge of school operation and management.

(ii) Set up posts of professional managers and a performance-based system.

(2) Appropriate administrative procedures to improve operational effectiveness.

a. Promote the quality of administrative staff by putting reward/punishment system to work:

(i) Set out a plan for quality human resource development.

(ii) Establish a performance appraisal system and actively replace unfitted workforce.

b. Streamline business processes:

(i) Set up SOPs across the board as well as a knowledge management system.

(ii) Reorganize and streamline business processes.

(iii) Construct with active efforts the database and management systems for business processes.

(iv) Improve the electronic accounting management system.

c. Review campus space and plan effective use of spatial resources:

(i) Review and reorganize current space allocation.

(ii) Plan and design new spaces.

d. Set up an online document approval system to manage files with information technology and digitization:

(i) Set up an online document approval system.

(ii) Build places to archive files.

(iii) Manage files with information technology and digitization.

e. Ensure effective implementation of project control and assessment system to improve operation efficiency:

(i) Formulate indicators to evaluate administrative affairs and set up a project control and assessment system.

(iii) Maintain the financial health of NTNU and enhance internal control.

(3) Excellent university marketing by making optimal use of social resources.

a. Create a brand image of quality and excellence:

(i) Follow the public relations SOP to issue press releases regularly, aiming for the objectives of "highly professional, highly responsive, and highly effective".

(ii) Interact and communicate actively with the press both at home and abroad to avail the earliest opportunity of marketing NTNU in all aspects, for NTNU to be regarded as one of the world-class universities.

(iii) Plan for annual media marketing projects, build a lasting brand image —"NTNU – cradle of masters", and fully support school policies.

b. Raise social resources:

(i) Build a platform to raise social resources and propose large-scale projects to unite NTNU units to vie for external resources.

(ii) Cooperate with professional companies to form a long-term fund raising mechanism to support the development of the university.

(iii) Encourage faculties to establish contacts with the alumni, and reinforce NTNU's service for and communications with them.