

**TOHOKU UNIVERSITY
JAPAN**

EVALUATION REPORT

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1. Introduction

This report is the result of the institutional evaluation of Tohoku University, Japan, which was undertaken in 2009, comprising a self-evaluation process which resulted in the publication of a self-evaluation report in September 2009, followed by two evaluation visits in October 2009 and January 2010. This report was written and edited in February 2010.

1.1 Institutional Evaluation Programme

The Institutional Evaluation Programme (IEP) is an independent membership service of the European University Association (EUA) that offers evaluations to support the participating institutions in the continuing development of their strategic management and internal quality culture.

The distinctive features of the Institutional Evaluation Programme are:

- A strong emphasis on the self-evaluation phase
- A European and international perspective
- A peer-review approach
- A support to improvement

The focus of the IEP is the institution as a whole and not the individual study programmes or units. It focuses upon:

- Decision-making processes and institutional structures and effectiveness of strategic management
- Relevance of internal quality processes and the degree to which their outcomes are used in decision making and strategic management as well as perceived gaps in these internal mechanisms.

The evaluation is guided by four key questions, which are based on a 'fitness for (and of) purpose' approach:

- What is the institution trying to do?
- How is the institution trying to do it?
- How does it know it works?
- How does the institution change in order to improve?

1.2 The Self Evaluation process

The self-evaluation process was undertaken by a committee comprising the internal executive vice presidents, chaired by Vice-president Masuo Okada who is also responsible for the evaluation for the institutional mid-term goals which form part of the performance contract of the institution with the Ministry. In addition to the members of the committees,

the latter was supported by 17 special advisors to the president all of whom were professors of the university from different parts of the university.

The process overlapped to some degree with the review of the mid-term goals which is required by the government and combines national and institutional goals and is meant to lead to improvement measures and funding adjustments. With respect to content and focus, the part of the IEP which was new to the institutions and regarded as a particularly helpful focus for institutional improvement was the SWOT analysis, which the university took great care to conduct with a self-critical spirit and wide-ranging angle covering all areas of institutional activities.

The team found the self-evaluation report to be very informative, detailed, supported by good and very readable data, and impressive in its willingness to convey an open and realistic picture of the university, combining vision and goals with descriptions of measures for their realisation and analysis of areas for improvement.

1.3 The evaluation team

The self-evaluation report of Tohoku University along with the appendices was sent to the evaluation team in September 2009. The team's visits to Tohoku took place in 27-30 October 2009 and 13-15 January 2010. In between the visits the evaluation team provided the evaluation team with some additional documentation on questions of governance and budget distribution as well as information on budget developments.

The evaluation team consisted of:

- Prof. Luc Weber, team chair, former Rector of Université de Genève
- Prof. Eric Froment, former president of Université de Lyon, former president of EUA
- Prof. Jean-Louis Vanherweghem, President of Université Libre de Bruxelles
- Dr. Sybille Reichert, team coordinator, Director of Reichert Consulting for European Higher Education, Zurich, Switzerland

The Team thanks the university for its warm welcome, its tremendous hospitality and, most of all, its openness and readiness to engage in a genuine dialogue which made the evaluation a very stimulating experience for the evaluators and made them hopeful that the process was really meant as a step on a larger path of continuous self-improvement which is the true water-mark of a top quality university.

2. Tohoku University's Mission and Position in the National and International Context

In the last decade Japanese higher education has undergone deep and far-reaching changes culminating in the 2004 reform in the course of which public universities became corporations with institutional and budgetary autonomy, comprising the selection of students, hiring of staff, definition of research directions and teaching programmes, and, to a more limited extent, decisions on the university's governance. The many new managerial tasks and processes which universities had to establish as part of the national reform are still in the process of being implemented. These include new institutional steering mechanisms, as well as new management know-how and staff profiles which often take years to implement. In addition to managerial innovation, some of the new challenges of autonomous steering and performance-based rewards also require mentality changes which will take more than a few years to develop.

In addition to the changes and expectations linked to the higher education reform, Japanese universities are also challenged by two other major developments. First and foremost, Japan is undergoing profound demographic changes, with a birth rate that has been declining dramatically for a number of years so that universities are now facing declining applications and increased competition for students. Within the huge private sector, some universities are beginning to close; others fill their student places by enrolling Chinese students. While former imperial research universities, like Tohoku, are still benefiting from their high acclaim and reputation and are unlikely to run out of qualified students soon, the fact that they have fewer applications to choose from is presenting some concern regarding the sustainability of current student qualifications' standards. Especially at graduate level, capacities are underused. Since Tohoku prides itself on having a tradition of "open doors", it should be well placed to expand the underused potential of female students and to expand their teaching and learning to target mature students and professionals as part of lifelong learning. This would be consistent with its own sense of being an institution that, in addition to its traditional emphasis on top research, also prides itself on being in touch with and responsive to professional practice, of practice-oriented education and research, and of being a university that is open to the community and the world. This orientation has become even more important in recent years when such emphases have become more central in higher education policy.

Another development which is affecting Japan in general and Tohoku in particular, regards the increasing global competition of research results and institutions. Like other internationally oriented research universities, Tohoku is following the various international rankings closely and is intent on improving its (already good) position in the Shanghai Jiao Tong's World Academic Ranking and THE-QS World University ranking. Tohoku University (TU) is well aware that its global success and visibility will depend in part on its ability to internationalise its staff and student body and to attract the best qualified among future and current researchers.

Among the Japanese universities, TU is firmly established in the top league of imperial research universities, among the four best in research performance, even second in innovation performance and third in national research grant acquisition. While it is less centrally located and more remote with respect to international connections, it offers the advantage of being situated in a town that is less crowded and very supportive of its university.

3. Vision and Strategy

TU aims to become a world-leading university, among the top 30 universities in the world within the next ten years. In terms of research performance it has reached this aim already (in terms of research impact/ citations) in the areas of physics, chemistry and materials science where it is placed among the top 3 to 17 ranks. However, in overall performance it is ranked as 65th in terms of citations, and some areas, such as the life sciences, which are placed in the 100th-150th rank tile, or the social sciences (which suffer in part from the English language bias of the ISI journals data base) reveal more mixed performance. Considering its annual budget of 116 billion yen (= \$ 1.28 billion or € 857.7 million) as compared to Harvard's \$ 3.8 billion, Cambridge \$ 1.1 billion or ETH Zurich's \$ 1.25 billion, such a position is theoretically possible. However, given the continuous improvements at the top institutions and comparable ambitions of other internationally oriented research universities of similar position, joining the top ranks would be very much of an uphill struggle. It would certainly require sterner institutional steering, including:

- rigorous prioritisation of scientific areas with the best position
- examining the performance and addressing the future of underperforming units
- concerted hiring to improve areas with lesser performance but high potential
- much more differentiated pay conditions and
- very competitive research and living conditions to attract the best qualified senior and junior researchers from all over the world
- the ability of the institution to develop dynamic interdisciplinary collaboration and define new research, and graduate teaching programmes at the interface of existing disciplines would have to improve considerably.

TU seems to be well aware of these challenges and the leadership is intent on meeting the challenge and on moving dynamically ahead with high ambitions. Especially, in its Inoue Plan, Tohoku University has shown the ability to analyse its situation and position clearly and to formulate plans that are consistent with the perceived need for improvement. TU has indeed identified strategic measures, as, for example, targeted expansion and quality improvement of its life science sector, the introduction of performance-based internal resource allocation, and the establishment of some new research centres. Moreover, in order to realise its ambitions, TU wants to expand its internationalisation forcefully, both at undergraduate and graduate levels as well as in terms of hiring faculty. Nevertheless, the evaluation team believes Tohoku University has yet to develop some of the steering instruments necessary to pursue the above paths, as will be described in the next section.

4. Organisational Structure and Governance

Addressing the above-described challenges is not only difficult in itself, but is made even more difficult for a highly de-centralised institution such as Tohoku University. Indeed, at Tohoku, the level of de-centralisation is so high, and the culture of decision-making so consensual, that the university has not yet been able to enact overarching institutional priorities, incentives, or rewards.

At TU, leadership positions are designed to be weak at every level of its organisation, with the exception of the president whose position is defined to be strong in the national law. The deans are elected from among the peers for a short duration after which they have to face their colleagues again. Their level of identification with the other professors in their faculties or graduates is higher than their identification with overarching institutional aims of quality improvement. Their readiness to take controversial decisions is hindered by the fact that they return to their status as colleagues after just two years in office. Even the central leadership positions have only limited responsibility and decision-making power, as both the Executive Vice Presidents and Vice Presidents have to report to the Presidents for all their decisions. The President, in whom the recent law has vested wide-reaching decision-making power, seems to be still unsure as to how to strike the right balance between consultation and persuasion and consensus, on the one hand, and top-down decisions, on the other, which would set clear strategic priorities favouring some areas to the relative detriment of others.

Especially with respect to decisions which would result in uneven distribution of resources, the existing structures and habits of decision-making processes are acting as a system of brakes, rather than as a motor of institutional development. While good ideas as to how the institution could become even more improvement-oriented abound and are developed at all levels (and implemented in some de-centralised units), their systematic institutional implementation is hindered by the largely consensual culture of decision-making and by traditional expectations of equitable distribution. Moreover, deliberation opportunities take up much more space in meetings than actual decision-making, since all bodies – the Board of Directors, the Management Committee, the Education and Research Council as well as the President Assistance Meeting - are essentially used as deliberation platforms.

Of course this assessment should be put in perspective. One should keep in mind that the incorporation of universities is recent, which means that university culture still needs time to build up a spirit of self-enablement, recognising that it is the master of its own destiny, rather than a mere recipient of decisions from above. Such a mentality change affects all levels of university governance. The institution still has to develop its own sense of when there should be time for wide-spread brain-storming and deliberation and when there should be courageous decisions which cannot avoid uneven treatment on the basis of vision, merit and position. The Evaluation Team has seen many signals that attitudes are undergoing rapid change and that an increasing number of university representatives see the urgency to adapt

to demands of national and global competition. However, the team also thinks the time has come to:

1. *Review the role of the existing decision-making bodies and procedures to make sure they are not acting as hindering forces but rather as facilitators of the most forward-looking decisions*

Such a reform of decision-making bodies would build identification with institutional perspectives rather than merely concentrate on a particular interest and would also enable the president to build a record of trust in his ability to steer the institution forward once some more controversial decisions have had the time to show their positive effect on institutional development.

There is also some unnecessary doubling of deliberation bodies and functions, the Team feels. Although the Team understands that the Board of Directors, the Management Committee and the Education and Research Council are required to be set up according to the law of National University Corporations, they seem to have a rather similar list of issues to deliberate over. This would seem to lead not only to a waste of people's precious time but must also be experienced as an obstacle to change rather than as an enabling instrument for institutional development initiatives. It would be advisable to separate out strategic and operational functions among the different bodies.

2. *Strengthen the strategic dialogue between president and de-centralised units, in particular the deans and heads of institutional institutes*

It seems that, as yet, the dialogue on strategic institutional development opportunities which would reach across faculty boundaries does not dominate the Research and Education Council nor any other meetings of the president with the deans. The exchange between the president and the deans, especially, should focus mostly on such questions of institutional development and strategic initiatives. The more operational questions should be left as much as possible to the de-centralised units, unless institutional services are concerned. As yet, it seems that the communication between the president and the deans is too much of a one-way information flow rather than a genuine exchange and development of ideas.

3. *Introduce focus areas for concerted hiring in areas of strategic priority at institutional level*

The most important aspect of institutional development consists in the **hiring policy** of the institution which should reach across departmental and faculty/graduate school boundaries wherever larger scientific and institutional developments are concerned. While proposals for the profiles of professorships for up-coming vacancies or new positions should obviously be submitted by departments, it is important to ensure that interdisciplinary and external international perspectives are considered and that new recruitments contribute as much as possible to a broadened developmental horizon (see section 5.4). In addition to ensuring that interfaces are identified and developed, the university should respond to new

scientific developments by providing clusters of positions whenever larger strategic initiatives seem justified. Some professorships should thus be pooled centrally to allow for larger cluster hiring. The existing presidential initiative to improve life sciences at TU is a good step in this direction. But, in the same vein, additional larger scale improvement strategies could be developed if some of the up-coming vacancies were pooled centrally, rather than only disposed of at departmental level. Especially, exciting interfaces between medicine and engineering or between technical and social sciences could be attended to more systematically if such central resources existed. Of course, it would have to be ensured that ideas for the scientific domains which are to be prioritised be developed in dialogue with the departments.

4. Facilitate development of interdisciplinary programmes;

Another area which is currently somewhat underdeveloped, which would benefit from more central institutional attention and an institutional dialogue between the faculties/GS concerns the development of interdisciplinary programmes. While TU has taken a number of remarkable initiatives to promote interdisciplinary competences among students and young researchers, it seems that, compared with other major research universities in the world, it offers few interdisciplinary programmes. Those that do exist seem to have required separate structures, namely Graduate Schools, as is the case for the programmes in Environmental Sciences, Biomedical Engineering or Educational Informatics. These Graduate Schools differ in size from the other GS to such an extent that they seem more like departments. Especially at graduate level, it would benefit TU's competitiveness to be able to develop interdisciplinary programmes more easily without having to create such new institutional units, i.e. simply by combining resources of existing units. This would allow more flexible piloting of new programmes and would also facilitate their discontinuation if they do not live up to expectations. If this is currently difficult in terms of organisational, personnel or financial transfers, TU should review the exact nature of the obstacles and remove them.

5. Strengthen the strategic role of deans and their institutional strategic involvement – dissolve the rigid vertical boundaries between faculties

Another problem of governance which TU faces, just like most European universities, concerns the role of the deans. Not only are these, as described above, comparatively weak in their own steering function (e.g. internal performance-based resource allocation), they are also not acting sufficiently as relays between the central institutional and de-central perspectives. As yet, their perspective is limited to defending the interests of their faculty or Graduate School rather than also contributing to the development of the institution. This limitation affects, for example, the ability to pool positions for larger interdisciplinary networks, hiring policies or other thematic initiatives which could increase international visibility in areas of outstanding institutional strength. Moreover, trans-faculty programmes, and common use of infrastructures are not as easily developed in an institution where the vertical lines between the units are relatively rigid. The team thus recommends that the institution, under the guidance of the president and on the basis of the ideas of the deans, develop common initiatives, both with respect to larger scientific developments where TU

has identified opportunities to increase its global position, and with respect to common infrastructures, services and external relations. While some such services do exist, their quality and scope could be increased if more inter-faculty synergies, exchange of ideas and initiatives were sought. The president could meet the deans regularly on a more informal basis to exchange ideas on particular institutional themes. If the president acted as a moderator of such discussions on common institutional developments, the institutional identification of the deans would be promoted.

6. Clarify responsibilities among central consultative bodies and executive leadership

The Team took note of various responsibilities of the Executive Vice-presidents (EVP) and Vice-presidents (VP) and found that their responsibilities were not always clearly delineated. Indeed, some professors at de-centralised level noted that the EVP and VP had partially overlapping responsibilities and that it was not always clear which one should be addressed (often both). Moreover, it seems that the EVPs who are responsible for larger areas (such as research or education) cannot really decide over issues in their domain but have to report to the president for most decisions. The Team thus recommends that the university should distinguish more clearly between those issues for which the president should retain the last say and those which the EVP can decide for him- or herself. In addition, the EVP or VPs should delegate more operational responsibility to their senior staff to ensure efficient and swift everyday operations. At leadership level, it would probably be more helpful if there were only one line of command between the EVP or VP and the service units.

5. Making Optimal Use of Human Potential

5.1 Students

Students who make it to TU from the Japanese high schools will have passed an entrance exam and are generally talented and well qualified for their studies. However, the declining number of applications could undermine this positive situation in future. Moreover, the Team took note of the problem that, given the narrow education of students at high schools, they arrive at university with insufficient general education and transferable skills. TU is to be applauded for having taken the initiative to address this problem. To compensate for these shortcomings, TU is investing time and resources into what is called a liberal arts education, which, upon closer look, is actually a general education programme combining English language and transferable skills training, with some humanities or social science courses. This university-wide provision is spread over the entire undergraduate curriculum with gradually decreasing intensity in the upper years. While all agree that something has to be done to render TU graduates more prepared for a global working environment, there is some disagreement whether such general education does not impinge too much on the time needed for specialised education. The Team agrees that some transferable skills training may be beneficial at undergraduate level but recommends that TU should try to solve the problem rather, at least in the long term, through influencing the high school curriculum, together with the other influential research universities. Otherwise, both international mobility at undergraduate level and the level of specialised training of the TU graduates may not be up to the standards of comparable top research universities abroad.

In addition to the problem of transferable skills and general education, the Team witnessed that undergraduate teaching and even part of graduate education seemed to be largely characterised by frontal teacher-centred teaching with very few opportunities for interactive and individualised or team-based teaching, with few demands on their own critical thinking and active participation.

The Team feels that, given the very favourable student-staff ratios at TU, the university should do even more to up-date its teaching methodology and that this would indeed be necessary if TU is serious about its mission of “enabling students to explore new avenues of human knowledge and to become aware of responsibilities in leadership” (Towards Tohoku University 2016, University Fact Book, page 2). While the move to more interactive student-centred teaching would require considerable investment in staff development and didactic support for teachers as well as significant engagement on the part of teachers, the Team would recommend pursuing this route with the necessary resources in order to ensure that TU graduates are sufficiently prepared for an active leadership role inside or outside of academia, as would befit the position and ambition of TU. Some good practices already exist in terms of peer-to-peer teaching support or computer-based interactive learning environments, but more systematic development measures are needed to change the quality of undergraduate education in line with TU’s ambition. Moreover, the institution has to provide more rewards and visibility for the quality of teaching to ensure that professors at all

levels invest sufficient attention and innovative energy into their teaching practices. The existing quality reviews of these practices should be published more widely and lead to some improvement measures to ensure that teaching practices really change.

For an internationally oriented university, students are clearly insufficiently prepared for a global academic or working life. Their English knowledge is usually passive, i.e. probably sufficient to read general or scientific articles but not to lead a conversation or participate in discussions in English (as the *lingua franca* of science and of global management). The same is true of any other widely spoken foreign language. TU has identified the problem and is providing language learning support but the effect would be more wide-spread if parts of courses or seminars were taught in English, with opportunities for group discussions and project work in English. This would perhaps also reduce the reticence of TU students to study abroad. (see also section 7. for internationalisation of the student experience at TU).

While well-equipped, the student learning environment seems as yet insufficiently enabling. By this the Team means, based on student reports, that student needs and criticisms are not taken seriously enough as an important point of departure for continuous institutional and departmental self-improvements. While student evaluations are in place, the response to suggestions for improvement seems to be somewhat insufficient. A number of students seemed to feel that their participation, interaction or suggestions for improvement were not leading to results. To fuel the engagement and enthusiasm of TU's students as future leaders in society, their initiatives should be mobilised and supported. To this end, more active student participation in curricular and teaching reforms, incl. surveys to improve student services and infrastructure, would be an important change. Their active participation on teaching and learning committees is particularly important.

5.2 Young researchers

TU offers diverse career options at all stages. In addition to full professors, permanent positions as assistant professors are also available. For young researchers, it thus seems that a variety of routes could open for them, at Tohoku or elsewhere. Generally, it also seems that they can gain access to the international research community if they are willing to make the effort in terms of language learning and physical mobility. However, since the support of senior researchers seems strongly required for career advancement, and senior professors often need younger researchers for their actual experimental projects, the possibilities for young researchers to develop an independent research profile are still limited and quite varied across the institution. There are few possibilities to enter the institution after the post-doc level with an independent assistant professorship, with a tenure option of continuing at TU as associate or full professor if the research record would support such promotion after the assistant professor phase. Clearly, there is a need of more independence with more hopeful career perspectives, for TU to be a competitive research environment for the best-qualified international researchers.

Moreover, it seems that TU is still in the habit of building too many research profiles through promotion inside the institution. Unless such promotions are associated with rigorous first recruitment (at assistant professor level), e.g. associated with the above-mentioned tenure option, inside promotion could be the result of local biases, insufficient competition and thus insufficiently rigorous recruitment standards. To encourage graduates to build an internationally visible career and networks, the university should encourage post-docs abroad. If doctoral graduates are worried about their career options upon their return, measures should be devised to ensure some re-entry into the university, if their qualifications are sufficiently promising.

5.3 Female researchers / academics

Like other Japanese universities, female students and academics are severely underrepresented at TU. This is all the more problematic as the demographic situation makes every qualified talented individual a resource that cannot be wasted. The Team took note of the fact that TU is itself already a recipient of this problem since it inherits an insufficient flow of female students, especially in the natural sciences and engineering, and even in medicine, from the schools. TU has started an excellent initiative, the "Science angel project", to mobilise more women to pursue a career in the sciences or engineering. Such initiatives could be expanded into close connections with some schools, and regular projects helping girls build identification.

But the problem of insufficient encouragement still persists at TU as well. Given the lack of role models of female academics, especially ones who are able to combine a professional with a family life, more should be done to facilitate these choices for female students. At advanced undergraduate and master level, well qualified female students should be targeted and encouraged to pursue academic careers. At doctoral level, mentoring and support in establishing a professional network for young female academics should be provided. Mentors could and should also be male seniors who could support the career development of qualified female scientists (since there are not enough senior women around). Given the unease which female scientists expressed at being singled out (even if this is done with positive intention) and at not being able to pursue their work with the support of some female peers, it may be advisable to concentrate first on some areas where several women could be mobilised at the same time, so as to avoid isolation.

Very importantly, more institutional support is needed for compatibility of career and family life. As yet, working hours deter women from embarking on an academic career. More flexible working hours should be allowed. Recruitment criteria for assistant, associate and full professorships should take reduced work load into account wherever family duties imposed these choices, without making it a disadvantage for female applicants. Moreover, child care should be provided on campus so as to facilitate the combination of academic life and child-raising. Finally, it would help to provide parental leave opportunities for both mothers and fathers, and also to provide support, e.g. in form of a re-entry fellowship for academic career re-entry after parental leave.

Dual career appointment for academic couples would also be a point of attraction, nationally and internationally.

5.4 Recruitment procedures

TU's potential to improve its already excellent international position further depends largely on its research staff, their willingness and capacity to excel and to go beyond the international frontiers of knowledge. Clearly, recruitment from a sufficiently large talent pool is thus TU's most decisive strategic activity.

In this regard, the Team found that some faculties show acute awareness of the decisive nature of recruitment policies while others are more provincial in their attention to hiring. The readiness to apply the most rigorous quality standards and to define new scientific profiles for vacant professorships, rather than look for simple continuity or hire from amidst the locally bred assistants, can be found in some departments but not across the whole institution. Indeed, at some faculties, professors even complained of the low performance of some colleagues, the fact this did not result in any action and the negative effect such performance was or would be having on the rest of the department and its budget.

If TU wants to improve its international position further, it must ensure that recruitment quality standards should be uniformly high and should consider only the most competitive or most promising candidates in the field. To this end, recruitment standards and procedures, and the composition of hiring committees should not be left to the discretion of departments alone, as seems to be the case currently. While the department should have a role in proposing professorial profiles and candidates, the hiring committees should be composed of external members to ensure that professorial renewal will not simply follow traditional directions. In addition to the members from other departments who are already included in the committees to allow for interdisciplinary interfaces, TU may want to invite external members from other institutions to prevent traditionalism and inbreeding in recruitment decisions. Overall, it seemed there were still too many appointments made from among the internal candidates. If the assistant professors originally came from outside of Tohoku and were hired according to the same rigorous standards, in a tenure-like process, this would, of course, not be a problem. But if candidates followed their entire career inside the institution, the danger of insufficient innovation and against-the-grain thinking would be high. The Team witnessed a considerable range of standards and procedures across the faculties and would recommend that TU review these in order to define some more homogeneously high quality recruitment standards across the whole institution.

To optimise performance and motivation to excel, TU is seeking to expand the performance-based funding proportion of the budget. This is clearly a good idea. However, TU should make sure that the rewards or sanctions do not just apply to the overall unit but would also increase or decrease the resources of individual professorships (as is already practiced in some faculties/GS). Given the fact that few graduate positions are being funded

through the national research council, one may want to vary the level of researcher (doctoral or post-doctoral) positions according to reward individual achievements.

5.5 Administrative staff

Given the many institutional goals which concern services and new management practices, it is obvious that administrative support staff and executives are facing a rapid transition to new administrative processes, with changing staff profiles, especially in such areas as research management, knowledge transfer, and international services.

It is unclear to the Team to what extent the discontinuation of staff contracts is legally or culturally acceptable in Japan or whether attitudes are changing in this respect. In any case, TU will need to hire some new staff for new types of services with radically different competence profiles, expertise, language abilities and international experience, in order to address its own internationalisation and innovation goals.

In addition to hiring new staff, TU will need to up-date and develop the competences of existing staff through targeted training measures. TU should systematically review existing staff profiles and performance and reward staff through combined training and promotion measures wherever the starting point and learning capacity suggests that competence profiles could be fruitfully expanded. Thus some degree of professionalisation could be promoted with existing staff. One example of such a development need which was mentioned by many professors concerned the English language abilities of administrative personnel in those units where a considerable number of foreign students and staff had to be supported. Especially at central level, a foreign scholars office should help visiting or newly arrived foreign academics with all the administrative forms and processes.

6. Internationalisation

TU is an internationally oriented research university, notwithstanding its important responsibilities toward the nation and the region. However, TU's international dimension varies in depth and scope, depending on the aspect of institutional development. In its research contents, TU seems clearly international while in its staff and student profile it is still largely national, with the exception of internationally oriented centres such as the Global Centres of Excellence and the WPI Institute of Advanced Materials. TU is well aware of this situation and has made the further internationalisation a top institutional priority.

As mentioned above, the Team feels that the efforts to internationalise further should also address the curriculum and classroom discussion contents since global competence is not yet sufficiently promoted, and broadened cultural outlooks or exposure to diverse cultural environments is still lacking. One way to internationalise the student experience at TU would also be to provide more international course content, particularly in project work or exercises. Obviously, greatly increased incoming student mobility would help global outlooks in classroom discussions. But even careful attention to global competences in course contents (not just in the sciences where contents are global by nature) would help to broaden students' horizons and competences. TU is well aware of this challenge and has been introducing new measures to address this problem, e.g. in its targeted attempts to introduce more international orientation in the liberal arts education. In addition, the Team would recommend a systematic review of the curricula in view of increasing international course content.

Student mobility is reportedly a problem in both directions. While incoming mobility has risen, most of the international students are Asian (83%). Excellent language courses are available, as the Team learnt, and incoming students are also supported through buddies or tutors, in addition to the natural hospitality of the locals. Given its status as a highly ranked former imperial university, TU should not have any trouble in selecting from its already well-established network of exchange programmes a few institutions of compatible profile with which curricular compatibility or even some joint curriculum development could be undertaken, so as to integrate mobility into the existing curricula and make recognition of study abroad easier.

In this respect, huge progress has been made within Europe through the Erasmus exchanges with their full recognition of study abroad, as well as with inter-institutional joint degree development, offering some good practice which TU may want to use for its own institutional and inter-institutional exchange arrangements. In particular, expanding the offer of joint degrees with complementary universities abroad is a very promising method of internationalising, as the European experience shows. Such joint degrees often facilitate student mobility since study abroad can be more easily integrated into the curriculum and allows students to meet colleagues from peer institutions already at home, increasing the motivation to go abroad. Moreover, successful joint degrees are often a particular good

marketing instrument for attracting well-qualified students from all over the world. While TU has developed some such joint degrees, it could become more active in this area, especially in those areas which are already very well connected internationally. For particularly visible joint degrees, TU could attach fellowships for outgoing and incoming student and staff mobility.

Given the perception that mobility may detract from the important job search in the last year of undergraduate studies, TU may want to arrange mobility programmes which offer clear professional advantages e.g. through combined study and internships abroad. Closer dialogue with key employers could help design appropriate programs. Some exclusive combined study/ internship programmes in Europe, such as *Unitech* (www.unitech-international.org) have received great commendation from participating employers and universities (such as ETH Zurich, Ecole Centrale de Paris, TU Delft) for their pursuit of professionally relevant excellence and global competence in student exchange.

Another challenge that the university is well aware of, concerns the establishment of an international office for scholars and a relocation service which would support newcomers during their first orientation and integration to Tohoku. As yet, administrative support for international scholars is still very limited, and most bureaucratic procedures are entirely in Japanese with no explanatory forms in other languages. The burden of dealing with the first steps of immigration, housing, schools, health care and all other matters of settling in, are currently most often left to the immediate host departments and their staff. A central service which would gather relevant information, know-how, experience, contacts and expertise would be more cost-efficient and much more effective and would save expensive scientists' time.

The Team also learned that the housing situation remains inadequate for incoming students and scholars. The existing guest house is only available for short stays of a few weeks but would be urgently needed for incoming scholars who stay for one to two months. The university should support such longer short term staff mobility since one or two month stays would allow local students and researchers to benefit much more from the incoming guests.

7. Quality Assurance and Development

TU is clearly a university with an acute sense of high quality standards and a wide-spread willingness continuously to improve itself. TU has developed a systematic quality support system, with monitoring and data collection at all levels. The Team witnessed countless measures of institutional self-improvement which reflect a lively concern with quality, a good awareness of international practice and standards in many parts of the institution, and a willingness to invest time, energy and resources into further improvement. Examples of such quality culture, are the initiative to introduce divisional evaluations, or the bonuses given to high performing professors in some departments, the measures taken to respond to shortcomings in general education or to promote interdisciplinary competences among particularly qualified young researchers. However, in most respects, it seemed that the internal quality processes were more oriented toward compliance to pre-set aims (e.g. with the defined Inoue Plan or mid-term objectives) rather than to continuous open self-improvement. It is not clear to the Team how new ideas for improvement or institutional development can easily emerge through the existing processes.

In terms of actual quality assurance processes in the more technical sense of the term, it seemed that these were mostly defined by quantitative indicators, which had been partly adapted to those of the national evaluation (NIAD-UE). This means that many aspects of quality would not be addressed or rewarded, in so far as they are not measurable. This was particularly strongly criticised in those faculties where quantitative indicators are even less reflective of actual quality, namely in the social sciences, education, or arts and letters. To ensure that all dimensions of institutional performance are taken into account and rewarded where they excel, the Team recommends that the Faculties/GS propose their own methods of ascertaining quality and are then assessed accordingly. In general, TU should ensure that the unmeasurable aspects of quality also receive sufficient attention and encouragement. The Team supports the idea of extending the scope of TU's internal quality improvement questions to include the priorities of the Inoue Plan but also recommends that such institutional priorities should not just be reviewed in terms of quantitative targets but also in terms of qualitative improvement of a less measurable but still describable type. After all, one should remember that the real quality of research and education is difficult and, in many respects, even impossible to measure.

While quality monitoring focuses on the realisation of the mid-term goals and the priorities of the Inoue Plan (the first plan of any university after corporatisation in 2004), there is as yet a very limited repercussion of these results on funding levels. The slight increase of the management fee of the faculties/Graduate Schools seems to be too negligible in comparison to the external funding which individual professors receive through third party competitive grants, to steer institutional behaviour. The university is to be applauded in having significant central discretionary funds for new strategic initiatives but it should also, the Team recommends, develop more institutional rewards linked to high quality performance, such as differentiated salaries, bonuses, sabbatical rewards, seed money for high-risk research projects etc.

The most decisive quality assurance instrument consists in the recruitment of professors, since these are the most long-term investments which the university can make. The team's recommendations in this regard have been described in section 5.4.

In general, with respect to human resource development, quality development is not always consistent with TU's goal. Individual staff improvement or development measures should be organised and should be sufficiently professional.

Since TU has many good examples of excellent research environments which are able to attract people from all over the world, it would be beneficial to spread such good practice more systematically across the university.

Last not least, the teaching and learning evaluation process, which is of major importance to TU in times of increasing competition for qualified students, leaves some room for improvement, as has been pointed out in section 5.1. To improve the insufficient feedback from student evaluation results, student-teacher committees for quality development could offer more targeted attention and could provide a helpful instrument to address suggestions for improvement. The pressure to improve teaching quality would also increase if evaluation results were published in the faculties, and available for students so as to help their course choices.

8. Conclusions

As a former imperial university, Tohoku University can boast a long tradition of excellence and an internationally recognised high level of research performance in a majority of its subjects. TU should be applauded for its ability to monitor its own performance, to identify its strengths and weaknesses and to formulate ambitious yet meaningful strategic aims for the whole institution. Moreover, the institution should be commended for having set itself the challenge of improving its already good international position through more systematic quality improvement, far-reaching internationalisation of its student and staff profile and forward-looking strategic priorities. However, this aim can only be realised if the university balances its own high degree of de-centralisation by enforcing institution-wide quality standards, by establishing strategic incentives and by reallocating funds on the basis of scientific performance and institutional development potential. Currently, the organisational and decision-making structure does not allow for sufficient spread of ideas and good practice across faculty or institute boundaries, for larger strategic initiatives in times of stagnating budgets, or for homogeneously rigorous quality standards. TU's robust quality assurance processes will only be able to contribute to an overall improvement of institutional performance if institutional incentives, hiring policy and resource allocation reward those areas and individuals which have performed best and which show the greatest promise to realise their vision of scientific and institutional development.

The Evaluation Team has seen wide-spread ambition, energy and imagination of researchers, teachers and students to excel and to improve oneself continuously. It is thus optimistic that TU will be able to overcome its own structural obstacles so as to increase its own capacity to change and to realise its most ambitious visions and aims.