



TKK Dipoli International Peer Review FINAL REPORT

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Executive summary

Helsinki University of Technology (TKK), Finland is to be complimented for the forward commitment to quality control in continuing education by requesting this international peer evaluation for its continuing education centre (Lifelong Learning Institute Dipoli / TKK Dipoli). The timing was excellent because of the EU-US Atlantis programme project Development of Accreditation in Engineering Training and Education (DAETE) which started in the beginning of this year and collected excellent benchmarking data. The international representatives of the peer review panel were also involved in the DAETE project which was designed to develop a self-evaluation process and questionnaire. TKK was a part of this group so there was excellent data available to do real benchmarking.

TKK Dipoli was a clear leader in the group compared with numbers and examples that showed its high international rating.¹ The interviews and reports examined by the panel showed a good customer communication system and development activities focused on Finland's needs.

The financial picture, however, was not so bright. Loss in the last couple of years did not seem to be the result of market weaknesses but more internal problems. Although the management team seems to know what needs to be done the programme developers and other staff were not able to follow through. It moreover looks like TKK Dipoli is paying to its home university for services and facilities, which is not the case among all universities. It was not clear to the panel if the problem was lack of skills, communication of what is needed, or people not qualified to carry out the plan. However, specific actions were recommended to improve their system of communication and operations. In any case, TKK Dipoli is clearly providing an important service to Finland's industry and society.

Notwithstanding the financial weakness, with the advent of the Innovation University TKK Dipoli has very much to offer in addressing the universities' third mission requirements, and the much needed connections to the stakeholders of the Innovation University. TKK Dipoli should play an important part in finding the unique opportunities for this world-class university development and its unique collection of educational talent. TKK Dipoli's global networks are already in place and its international reputation will make global partnerships to a reality at the highest level. In researching future educational requirements, TKK Dipoli is a clear leader having already done studies regarding educational practices and contents as well.

The IPR panel provided many detailed recommendation involving increase in communication, financial practices, human resource management, planning and general suggestions. Both TKK Dipoli and TKK management must review these and select those that fit the new organization and especially the new Innovation University requirements.

¹ The Shanghai ranking places TKK between 402-508. The other universities participating in this international benchmarking were ranked to places 17, 21, 23, one in 102-150, two in 203-304, and one in 402-508.

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1 Background – Aim and Scope

1.1 Domestic and global markets for engineers - Some background data

There will be in 2015 over 225,000 engineers working in Finland. About four per cent of MSc engineers will be working abroad (estimate for 2015 some 3000). Probably the number of foreign engineers working in Finland is increasing, 2006 there were some hundred foreign engineers but 2015 probably some thousands.

University level engineers (under 65 years of age)	2006	2015
MSc Tech	46,600	66,800
BSc Tech (included in MSc)	200	14,000
Licentiate Tech	2,400	3,000
PhD Tech	3,000	5,000
Total	52,200	88,800
Polytechnic level engineers (under 65 years of age)		
BSc Eng	95,000	137,000
Grand total	147,200	225,800

Table 1 Some statistics of engineers as potential for continuing education market demand in Finland for 2007 - 2015

Globally every year about one million engineers graduate and enter the profession, from those 400,000 graduate in India; 300,000 in China; 70,000 in USA; 10,000 in Sweden; 8,000 in Finland and 200,000 in the rest of the world.

There is lively discussion on engineering skills shortage in Europe. It seems that there will be different solutions in European countries; some countries increase the intake of students of technology in universities, some underline the shortage of high level teachers. It is quite probable that in the future engineers of foreign origin are employed widely in Europe and in Finland as well. This means that in the future the engineering education will be ever more international which will reflect also to the continuing engineering education (CEE) market.

1.2 TKK's interest

TKK's interest for the review was articulated clearly in the memo attached to the letter of TKK's rector Matti Pursula when inviting the expert group to conduct a peer review of TKK Dipoli. The objectives for the review were laid down as follow:

- 1. To identify TKK Dipoli's activities' strategic status (role, tasks, quality and impact) in comparison with international leaders in university continuing education.*
- 2. To create, as a result of the review process, premises and recommendations how to continuously measure the productivity and quality of these activities.*

3. *To define the target status of these activities and to draw up recommendations how to reach the targets. Based on the recommendations TKK Dipoli can adopt a validated quality action plan.*
4. *To help those working in TKK Dipoli's international projects as well as TKK Dipoli's management commit to set targets and working methods so that the activities serve the implementation of TKK's strategies.*

1.3 TKK Dipoli's interest

For TKK Dipoli this review is timely and welcome for a number of reasons. TKK had recently been awarded by the Finnish Ministry of Education as a university of excellence in adult education. Such a nomination brought visibility and enhanced interest in further understanding the reasons for success and identifying the weaknesses and potential for improvement. At the same time the continuing education arena experienced rapid and radical changes calling for urgent action to cope with emerging changes in the operational environment in Finland, across Europe and further a field globally. Particularly important for TKK Dipoli was to research and develop the mechanisms of quality assurance, improvement of practice and the complex connection between the development of continuing education of engineers and delivery of services. This international peer review could not have had a better timing. It emerged as a unique opportunity to mirror TKK Dipoli's performance against best international practice under the supervision and surveillance of the international expert team:

- To update and interact in positioning TKK Dipoli's role in the dynamic field of continuous learning and education;
- To develop the pathway to lasting organizational maturity via highest good practices; and
- To investigate best alternatives to promote TKK Dipoli's networking functionalities in the respective operations of TKK Dipoli.

1.4 International model

Since this is the first international peer evaluation of the kind for the centre of continuing education of engineers as far as the evaluation team knew, it seems logical that the method of evaluating continuing education institutions is at the early stage of development. Therefore this process may serve as an encouraging example and help others to proceed along similar lines.

1.5 Innovation University

A new innovation university is being created out of three Finnish universities. The aim is to develop a world-class university that would be able to compete with the best foreign universities and be an interesting co-partner for them as well as for companies. The government of Finland has instigated a university reform of a historic nature in Finland by deciding on their consent to launch together three special universities in Helsinki area: Helsinki University of Technology, Helsinki School of Economics and University of Art and Design Helsinki.

The first term of the Innovation University will be opened in September 2009. It aims at being on the top of universities league tables by 2020. The initiative will gather momentum and substantially enhanced resources to support and strengthen teaching and research.

The motives behind the reform are as follows:

1. Having a significant improvement in the EU competitiveness it is necessary to modernize European universities. Universities must be capable of responding fast to changes in their operating environment and in society in general. According to OECD public sector office-type way of operating does not allow universities meet the new challenges of working life and globalization.
2. Increasing international competition for competence and knowledge creation requires universities to develop their role more towards innovations.
3. The objective is to enhance the quality and effectiveness of universities and promote internationalization. University resources must be allocated and universities be profiled more effectively.
4. Universities require a financing base that is more comprehensive than before.
5. Universities need enhanced opportunities for international collaboration, and also for international competition.
6. As employers, universities must present themselves as more competitive and attractive than before.

2 Review process

2.1 International Peer Review (IPR) team and its instructions

Rector of TKK Matti Pursula invited Professor Emeritus John Klus from University of Wisconsin–Madison, USA to lead the international peer review team and nominated into the team the following members (Invitation letter in Annex 1):

Director Mervyn Jones, Imperial College, UK;
Prof Alfredo Soeiro, University of Porto, Portugal;
Director Patricio Montesinos, Valencia Technical University, Spain;
Director Matti Hirvikallio, the Finnish Association of Graduate Engineers TEK, Finland;
Prof. adj. Timo Korhonen, TKK, Finland; and
Dr. Minna Söderqvist TKK, Finland.

The team was assisted by TKK Dipoli's leading international project manager Matti Sinko and the entire staff contributed to the information gathering for the team perusal.

The rector outlined the framework for the review this way:

1. *The review should cover all the activities of TKK Dipoli with a particular view to the strategic and international dimensions of them.*
2. *It should, however, focus on TKK Dipoli's present national and international activities and their role and impact from following perspectives: (a) TKK's goals, strategies and general activities, (b) TKK Dipoli's goals, strategies and other activities, (c) the goals set for a few most important projects and other activities.*

Rector emphasised that the review needs to be practical to serve to “direct the actions that are necessary to secure TKK Dipoli's activities' profitability and effectiveness”. Rector instructed the evaluators to “evaluate the exploitability of these actions as part of TKK's strategy”.

Particular attention was furthermore suggested to be paid to TKK Dipoli's international activities.

2.2 Process

2.2.1 Timetable, methodology, inputs

The IPR process was started first in TKK when the idea of an international peer review was presented to the rector by TKK Dipoli representatives in late 2006. The rector issued the invitation letter (Annex 1) in April 2007 which was the kick-off to the preparations in Dipoli for the review. The team was provided with a substantial number of documentation listed and provided with links whenever possible in Annex 2. The team convened for the first time in June in Dipoli and carried out great number of interviews with experts within TKK and outside as listed in Annex 3. The process then continued at distance using a dedicated Wiki area, email and audio meetings. The IPR team leader paid another visit to TKK in September and part of the team met in two occasions: in Wisconsin in August and in Rovaniemi in November. The timetable is in Annex 3.

The following documents formed the basis for the evaluation:

- The invitation letter of the Rector of TKK to conduct the review (Annex 1)

- Helsinki University of Technology TKK Strategy 2015: http://www.tkk.fi/General/TKK_Strategy_2015.pdf
- The LLL Strategy of TKK: [TKK LLL S 12.2.2007 Final Eng MM.doc](#)
- The draft proposal for TKK internal evaluation of TKK Dipoli's international development project activity performance
- [Answers to IPR questions re international markets of TKK Dipoli.doc](#)
- The summary of the joint evaluation of the TKK 3rd task activities of the TKK Dipoli and the Centre for Urban and regional studies (YTK): [YTK-Dipoli-evaluation summary-Dipoli-perspective.doc](#)
- Presentation slides of Tapio Koskinen and Matti Sinko on the international development activities of TKK Dipoli: [International activities 04062007.ppt](#)
- [List of TKK Dipoli recent international R&D projects: Kv-hankkeet 2000-2007.xls](#)
- The TKK Dipoli Balanced Score Card & EFQM: [TKK Dipoli BSC & EFQM 020907.ppt](#)
- The DAETE Wisconsin Self-Assessment summary table: [DAETE Self-Assessment Test Summary Table 070807b mm.xls](#)
- The comparative benchmarking data of a selected number of universities: [Data Results.xls](#)

2.2.2 European Framework for Quality Management (EFQM)

In August 6-7 2007, a meeting was held in Madison, Wisconsin USA to beta test the international evaluation tool. The other Universities in the test were among the leaders internationally including the following Universities: University of Porto, Portugal; Valencia University of Technology, Spain; Imperial College London, UK; Georgia Tech, US; RPI, US; University of Michigan, US; University of Wisconsin-Madison, US. Not only was the tool tested but the key performance data was benchmarked as well. TKK Dipoli was rated very high in many of the categories. In fact TKK Dipoli's contribution was the best of the lot and produced more samples of excellent practices than any other University. The results are presented in Annex 4.

The Shanghai ranking places TKK between 402-508. The other universities participating in this international benchmarking were ranked in the same list to places 17, 21, 23, one in 102-150, two in 203-304, and one in 402-508.

It must be remembered that TKK Dipoli's responsibilities are not just courses, but research, development, and support to other stakeholders, for example reports requested by Parliament, the government and European Commission and others.

Those unfamiliar with EFQM can review the self evaluation questionnaire and instructions at [_____](#). These results from the EFQM evaluation along with the interviews and report reviews, was an excellent starting point for this evaluation.

3 Findings

3.1 From EFQM

3.1.1 Self-evaluation of TKK Dipoli and a number of other universities

As can be seen from the comparison chart in Annex 4 TKK Dipoli scored very well. In addition, they were the most aggressive organization of the Daete team to use the tool to seek ways to improve.

3.1.2 Key indicators for TKK Dipoli performance compared to others

As can be seen from the chart in Annex 4, Dipoli seems to compare with others in areas of efficiency. It must be recognized that costs items included in these calculations differ from one organization to another. Since this was a beta test, the specific instructions regarding, what is to be included were not completely clear. In any case there was no evidence from this chart that pricing or other correction were the answer for TKK Dipoli's financial woes.

3.1.3 IPR observations

i Financial situation

The financial difficulties of TKK Dipoli during recent years is not just the CEE market problem but a more complex issue, which was not possible to evaluate during the review process in depth. The IPR team did not get enough data to comment with sufficient degree of confidence. And of course there are many ways to react to just a situation - all with equal chance of success. In addition, all of us in CEE have gone through bad years and learned a lot in the process. However, there were several observations that need to be looked into. TKK Dipoli is, however, paying to its home university all the costs of services and use of working rooms and conference facilities, which is not the case among all universities.

ii Management information

The Vintage and other TKK Dipoli knowledge management tools seem to be excellent. However the staff seems to lack the competence or motivation to exploit it properly, which was demonstrated during the IPR process, when the team experienced difficulties in getting the requested information allegedly available through the system like normal ratios and financial data (income, expenses, course numbers, income /course, SLH etc.). Such data readily at hand would help everyone be more responsible for financial success.

iii Work load and division of labour

It appeared that some of the TKK Dipoli staff members are overloaded with work. On the other hand the TKK Dipoli staff generally produces fewer courses than some other CEE organisations. It looks like the operational processes of TKK Dipoli are not developed well-enough. The work done by a staff member could easily be usable or exploited by the others. E.g. the course delivery is too often not a consolidated repeatable process but a single once-off effort.

iv Attitude

There was some indication of the lack of passion for CEE in some staff members. Without passion for the cause, efficiency loses. However, the dedication of TKK Dipoli staff in practical levels of operations was clearly visible in interviews conducted for this study.

3.2 Analysis of operations

3.2.1 Enablers

3.2.1.1 Leadership and management

Historically there have been two types of activities at TKK Dipoli, (a) the development and delivery of courses and programmes and (b) undertaking collaborative and frequently multi-national projects.

The managerial structure of TKK Dipoli could be elaborated further. Especially responsibilities and cooperation of all managers could be more clearly expressed and respective managerial structures constructed. New developments and structures have already been prepared and to certain extent implemented. This process needs to be concluded. (See recommendations.)

3.2.1.2 Staff

Over the years until recently the staff of TKK Dipoli has grown progressively. This is excellent, being a measure of success, reflecting a growing activity and hence the need for more staff. However increased numbers of staff requires more structure than exists currently and insufficient attention has been given to internal management issues. At one stage there had been a separation between staff involved in course development, marketing and delivery, which had not helped the development of a unity of purpose. Deficiencies in this system had been recognised by the management at TKK Dipoli and new structures are being tried, but further attention should be given to this important issues.

The complexity of global competence development requires a greater number of staff members with substantial industrial and international experience in order for TKK Dipoli to be able to scale up successful operations with top business professionals.

3.2.1.3 Strategy

- i. Meeting targets
TKK Dipoli's strategy contains several ambitious and well-defined targets. The strategy defines also some contradictory targets from which an evident one is the one emphasising industry tailored education in such a way that academic targets could be consistently and simultaneously obtained.
- ii. Importance of formulating TKK Dipoli's own strategy
It seems that realization of TKK Dipoli's strategy is not one coherent document but entangled and distributed to several places and it is not always clear what concerns TKK Dipoli in particular.
- iii. Importance of TKK Dipoli's mission and value definition
An important point in adjusting the strategy is in the values of organization. What are TKK Dipoli's values and how they align when compared to the values of partners or competitors? Especially, it should be clearly defined what are the practical processes to interact and market the mission and the value statement internally. This would greatly help in their detailed, high-quality realization.

- iv. **Feeding the customer's voice to the strategy**
TKK Dipoli's everyday practise is to collect feedback from customers. However, it is not clear if there is a consistent way to utilize this feedback to formulate and refine strategy. Also, it is unclear how personnel's feedback of TKK Dipoli's practical internal strategy (the actual way to work) is processed to generate and distribute applicable good practises within TKK Dipoli. If the personnel participate in the formulation of the strategy and especially in its realization plan in their practical work, a higher quality outputs and more motivated personnel result.
- v. **External and internal marketing of the strategy**
Marketing of TKK Dipoli's outputs to clearly defined customer segments could be better articulated and internally coordinated. It seems that currently know-how of customer segments is in a great deal in possession of individual course coordinators and no integrated management of marketing is established. Also, dissemination of customer information should be better realized. The Vintage database offers great possibilities for that.
- vi. **Pedagogical strategy**
Due to the fact that the amount of technical information expands exponentially and the developments of learning concepts, methods and software are rapid as well, this challenge should be better acknowledged and tackled in the centre's staff development as well as in its professional and organisational development and training offerings to industry and other customers.
- vii. **Cooperation with TKK's teaching personnel**
It seems that course planners of TKK Dipoli have weak connection to the lecturers and researchers in TKK laboratories. (See recommendations.)
- viii. **Exploitation of Vintage and other customer service systems**
It seems that the Vintage system and other customer service software tools have a lot of information that could be better utilized for instance to refine customer interfaces (segment marketing), improve facility and resource reservations, and to develop course offerings. Also, lectures offered by TKK Dipoli contain information that may provide to be useful in checking and updating the implementation of TKK Dipoli's strategy. (See recommendations.)
- ix. **Coherent and Continuous Quality Process**
Measures to monitor realization of strategy are addressed in certain extent in the strategy descriptions but they tend to be more quantitative than qualitative. There should be coherent practises in order to utilize innovative potential of TKK Dipoli's highly skilful staff to benefit it in both the internal processes and customer's interests in its services.
- x. **Summarizing questions on implementing the strategy**
What are the practical acts to boost regional activities as a part of the strategy? How the regional feedback structures are going to be realized? Especially, how the strategic networking to the forthcoming "Innovation University" and TEKES will be arranged? What is the updating plan of the strategy? How the outputs of self-evaluation (Effectiveness of the Implementation of the 3rd Mission, 2005-2007) are injected to the body of knowledge in the strategy? How the respective tasks are allocated to the personnel?

3.2.1.4 Partnerships and resources

TKK Dipoli has long before it became fashionable pioneered as an emerging network based organisation capitalising its partnerships within TKK, around Otaniemi campus and further a field on national and international arena. One dimension has been collaboration with engineering organisations like TEK, SEFI and IACEE. Another has been liaising with other universities and other higher education institutions and their continuing education units directly or through LLL networks like UCEFF, EUCEN and/or promoters of open, flexible and distance education networks like EDEN, EADTU, EuroPACE, ELiG and more focused research and development networks like MENON and PROLEARN. The third dimension has been collaboration with governmental and intergovernmental organisations, funding bodies etc. e.g. Finnish parliament, government, its ministries and its agencies like TEKES, Academy of Finland, DGs of European Commission, non-governmental organisations like Sitra, TIEKE, UNESCO, UN Habitat and UNEP. Finally companies and individual experts and consultants form a plethora of daily collaboration networks exploited on daily basis and also nurtured through slowly consolidated alumni activities.

All these networks have on the one hand enormously enhanced and empowered TKK Dipoli's capacity to cope with pertinent globalising learning challenges. On the other hand establishing and maintaining such a network also requires resources. Particularly because much of these networks are based on professional service and cannot directly be exploited for continuing education business. Striking appropriate balance is a key issue. Participation and its intensity must be checked at regular intervals to be able to keep the networking activities vibrant and focused.

It has been characteristic to TKK Dipoli over the years to initiate new pedagogical or social innovations, incubate them to functional practices or even fully-fledged organisations, in continuing education, particularly in the area of organisational learning, e-learning and lifelong learning. It has created new concepts, shaped sustainable organisational prototypes and transferred them to appropriate operational and societal contexts. This kind of protagonist activity fits well in the profile of CE centre positioned between the society and academia, even though often economically challenging and complex. Excellent specimen of these kinds of activities are TKK's Linkage programmes, TKK's Lahti Centre, International Association for Continuing Education IACEE, The Finnish COMETT Centre and The Finnish Virtual University. In all these TKK Dipoli was the incubator and hosting organisation and played a crucial role in developing their operations during the initial 5-10 years.

3.2.1.5 Processes

Elegantly designed and well-lubricated processes to implement the strategy are after all where the sustainability and success of an organisation is finally attested. How business is run in practice. Characteristic to university continuing education organisation is the capacity to adapt in an uncomfortable space between rapidly changing conditions, and not always well-defined needs and demands of customers and much slower reacting research communities providing research knowledge for customer needs. Processes must be quickly adaptable to manage to make the ends meet. Operating profitably in an operational environment which requires much tailoring and where economies of scale are rarely achieved calls for transparent, light and flexible processes. They must be pursued but it should also be kept in mind that serving the competitive edge of Finnish economy is not necessarily achieved by keeping economic competitiveness as the sole criteria of an academic CEE centre. Big strides can be achieved by applying systematically and repeatedly the EFQM analysis presented elsewhere.

One big issue are the competences of staff. The capacity to exploit organisational, process and content knowledge to adapt it to changing situations is the core competence which should be cherished in the organisation. It calls for capacity to process, modulate and modify accumulated knowledge capital into

new formations and programme designs. When the market is dispersed and diverse but big nevertheless, there is a huge demand for such a staff that is capable of adding value to the services provided innovatively and processes must be geared to enable such agility.

The through flow from an idea to a CE artefact (course, organisational development process, professional learning package etc.) wanted by a customer must be as short as possible or alternatively must manage to make customers become partners and thus willing to participate and finance the development and design of their learning process. It calls seniority, design and consultancy skills and processes that scaffold this type of new collaborative learning designs.

3.2.2 Results

3.2.2.1 Staff

The staff needs to appreciate the overall aims of TKK Dipoli, the interrelation of its various activities and the contribution that they as individuals are making to achieve these aims. Through strong internal communications a clear work matrix must be developed to achieve a customer focus, whereby the issues involved in the full cycle of activities from development to delivery are widely understood. Implementing effective structures would bring benefits to TKK Dipoli

There are some concerns about an insufficiently tight linkage between the reasons for TKK Dipoli staff undertaking project work, the outcomes of such work and the feed into TKK Dipoli's core course business. These concerns naturally grow if such work is not fully self funded, but requires part funding from TKK Dipoli's resources. While it is not suggested that such work should not be undertaken it is recommended that an appropriate mechanism be established within TKK Dipoli, both to ensure that the reasons for undertaking a project are widely understood that positive outcomes are implemented and can be seen to benefit the business and that there is a firm business case.

3.2.2.2 Customers

In developing its activities TKK Dipoli must recognise two important client groups. The first is the external professionals, companies, government etc that are TKK Dipoli's paying customers. The second group is TKK as the internal customer, who should be recognising that TKK Dipoli is able to enhance and augment its own activities. (It is not clear that TKK Dipoli is sufficiently strongly appreciated by TKK's departments.) To achieve this a unity of purpose must be developed within TKK Dipoli to ensure effective responsiveness to both of the two groups. This requires a harmonious balance between the demands of programme content, of pedagogy, of marketing and of delivery and the staff involved in various aspects. Careful attention should be given to a work matrix, which can draw on the staff strengths to achieve this.

3.2.2.3 Society

Echoing the joint internal evaluation of the impact of TKK Dipoli and TKK Centre for the Urban and Regional Studies (YTK) in fulfilling their third mission in 2005–2007 most important is delivering and disseminating TKK knowledge to benefit the stakeholder groups operating in fundamentally internationalized and global environments. In particular TKK Dipoli seems to be powerful in developing and disseminating knowledge which has been aggregated on and concerns the European and national level.

Another substantial competence area of TKK Dipoli seems to be LLL and professional development of communities of practice through exploiting ICTs. TKK Dipoli clearly belongs to the *avant garde* of this

field of expertise in Europe and exploits these competencies in its training delivery. The third success factor turned out to be in its strong networks and in the operational mode based on them.

TKK Dipoli monitors effectively what is taking place in the work places and seeks to foresee changes using sophisticated methodologies. On the other hand it brings to the working life organizations research based updated knowledge and competencies, which it pools not only from its own repositories but exploiting the plethora of the entire TKK knowledge as well as through its vast global networks.

Although TKK Dipoli is strong in delivering international and national level knowledge and in developing competencies needed in operating successfully TKK Dipoli has reached out no further than the Helsinki region. Internally the biggest challenge appears to be improving the level of exploitation of the outcomes of its own research and development in its own training activities.

3.2.2.4 Key Performance indicators

It appears that programme efficiency should be the main concern of management. TKK Dipoli has a good reputation, programme quality acceptable to the customer, but still are losing money. Therefore it seems that work load needs to be examined in some cases, and whether you have the right cross section of skills?

Without any doubt TKK Dipoli has good international reputation, well functioning international project cooperation and well developed strategic thinking and impressive ICT tools to help with strategic thinking. It can also be claimed that TKK Dipoli fulfils well the third mission of the universities being present in many places of society.

It should, however, be made clear between TKK management and TKK Dipoli what importance profitability has in relation to other objectives. If TKK Dipoli needs to be profitable, currently the biggest problem is the lack of business thinking. This means that the TKK Dipoli management should have a complete command of the critical business data such as

- the turnover;
- the most important customers;
- the most important products/services and their cost structures and profitability;
- how can customers find and buy them; and
- what are the cost structures of the investment type of functions like international project work etc.

3.2.2.5 Strengths

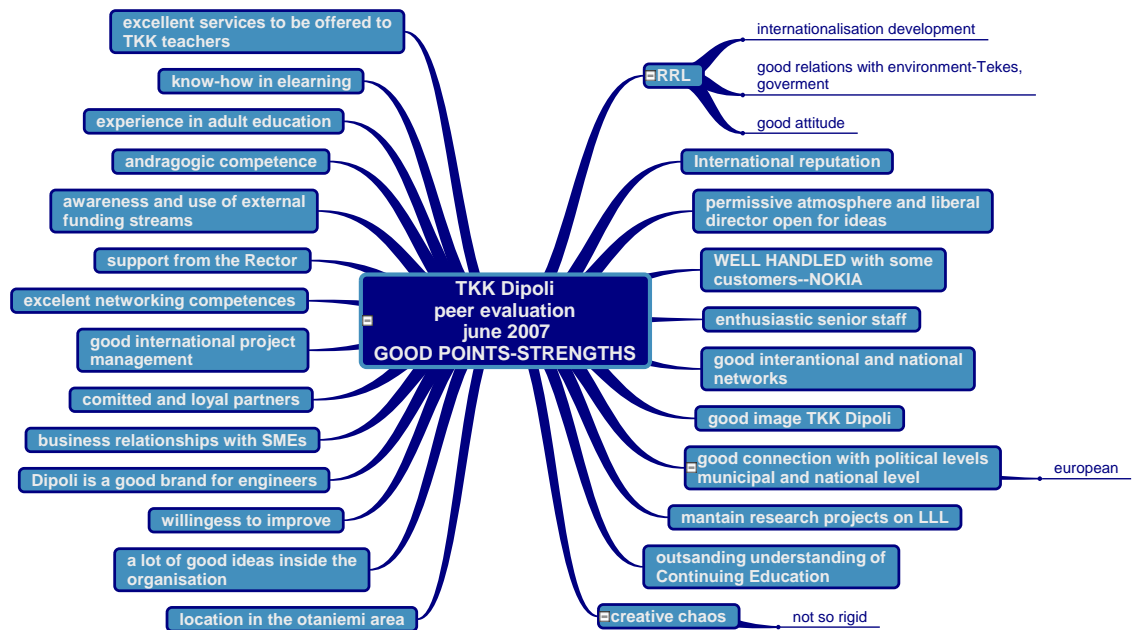
TKK Dipoli has an excellent reputation internationally as well as nationally.

The scholarly output of the TKK Dipoli top staff is outstanding.

TKK Dipoli's network not only internationally, but nationally both to customers and organizations are among the best and are international models.

The strengths of TKK Dipoli were summarised by the IPR Team in its June 2007 meeting in the following chart.

Figure 1 The strengths of TKK Dipoli



3.2.2.5.1 Management information system

The Vintage system seems to be excellent.

3.2.2.6 Weaknesses

3.2.2.6.1 Management information system

Developed knowledge management forms a core of every successful company. The Vintage and other management support systems could be better exploited in TKK Dipoli. Much of other administrative software and ICT systems in place are designed either for university's non-business units or purely for companies and support rather poorly the knowledge management needs of TKK Dipoli. In order for senior management to be well informed of the economic situation and to be able to make resource planning need to do much mundane administration work. This is frustratingly true of European funded projects in particular.

3.2.2.6.2 Staff motivation and use

The exploitation of staff competences seemed could be better articulated in TKK Dipoli's quality system. Insufficient focus in this matter lowers the motivation and performance of staff. Also, it seems that currently there may be some lack of passion for CE among the middle level of staff.

There appears to be a lack of programme manager or course director skills necessary to communicate with potential speakers to develop courses with high technology content and strong industrial needs. Quality of course offerings could be increased also by amplifying internal cooperation in the organization, investing on pedagogical skills of TKK Dipoli's own staff and creating more cooperation in the substances of course offerings with TKK. This kind of cooperation could provide internal benchmarking process for course offerings thereby assuring their quality already before launch. It should, however, kept in mind that traditional knowledge delivery type of courses are only part of the learning provision and development services offered to and needed by customers.

There needs to be a clearer financial plan down to individual staff and to individual courses.

3.2.2.6.3 Dipoli building

The potential of the Dipoli building as the potential meeting arena and living lab of innovators like high-tech entrepreneurs, students, researchers is poorly exploited and limited primarily to conferences and other formal training events.

3.3 International and national impact

3.3.1 Reputation

The historical contribution of TKK Dipoli to the scholarly side of Continuing Engineering Education is outstanding. In fact, the staff have produced more publications than any University in the World in this field. TKK Dipoli may be one of the best known units of TKK.

TKK Dipoli's important contribution e.g. to the starting of the International Association for Continuing Engineering Education (IACEE) has had a lasting impact. Serving as headquarters for IACEE for the first 7 years has demonstrated Finland's interest and commitment to continuing education. The quality of publications in engineering continuing education has further demonstrated its commitment to high quality research. If judged against its peers TKK Dipoli is clearly in the top 5 internationally.

TKK Dipoli has a wide network of well established partners, is well known and highly appreciated amongst its field of adult education and is a forerunner related to pedagogical thinking and e-learning inside the traditional university field.

3.3.2 Support to TKK and industry

TKK Dipoli's concern for serving Finland and integrating project and courses into community needs is at the highest level. Good connections to European, national and regional decision makers have contributed to that, but the panel members were very impressed with how much is done in this regard.

TKK Dipoli's role in internationalization of TKK

There are many issues with which TKK Dipoli can help other parts of TKK to develop their international activities and contacts.

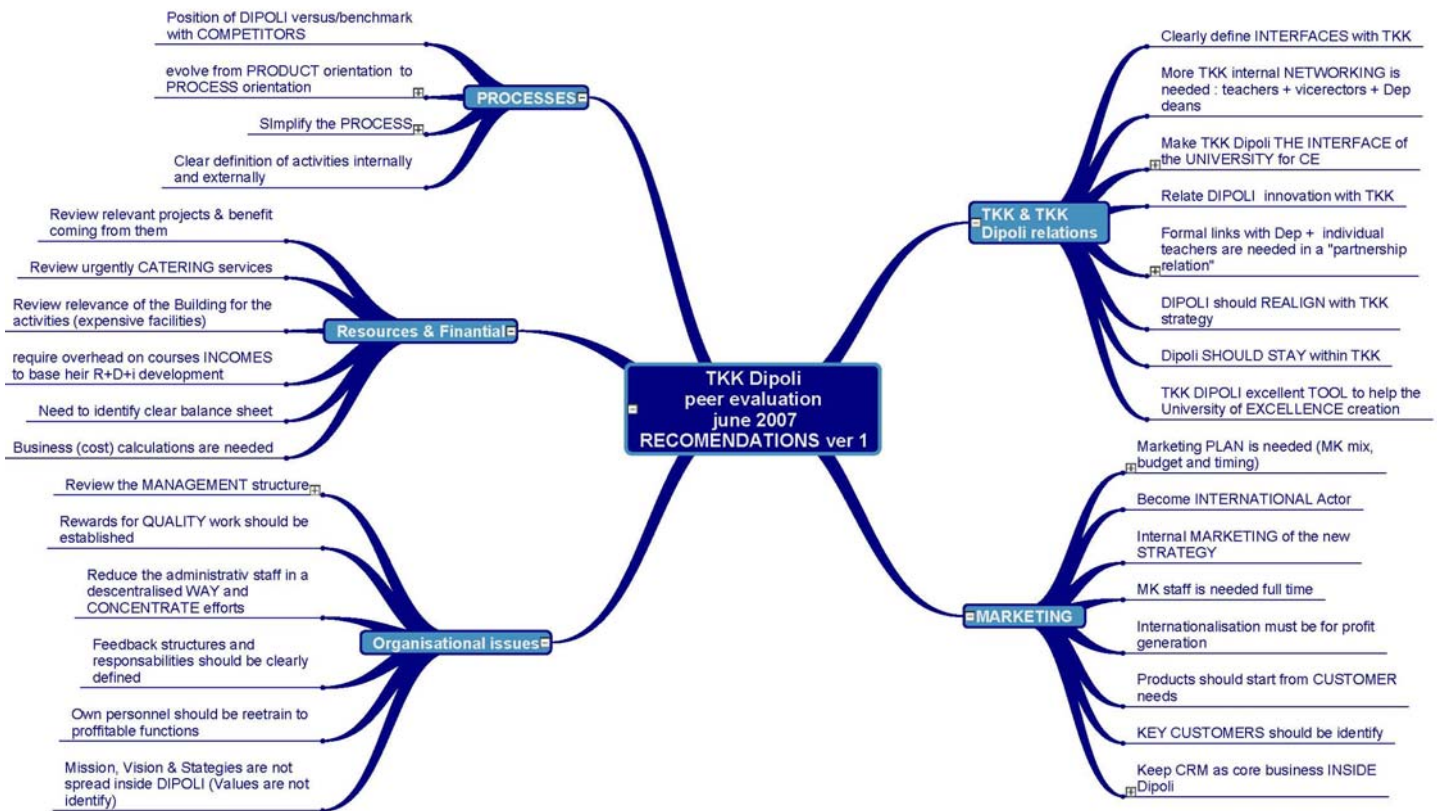
Until now only quantitative mobility objectives and quantitative publication objectives are discussed during the performance negotiation process (inside TKK and with the Ministry of Education).

TKK's objectives for years 2007-2009 set by the Ministry of Education are

- 600 foreign master's degree students;
- 360 foreign doctoral students;
- 15 per cent of the students of doctoral schools should be of foreign origin;
- 15 per cent of doctoral degrees done should be done by originally foreign students;
- 500 TKK master's students should study longer than 3 months abroad - during the year 2005 - only 263 did; and
- 500 foreign master's students should study longer than 3 months at TKK – during the year 2005 - only 350 did.

4 Recommendations

Figure 2 IPR team recommendation clusters



The recommendations could be clustered according to themes like Processes, Resources and Financial issues, Organisational issues, Marketing and TKK / TKK Dipoli relations as in the above figure prepared by the IPR team in the process of analysing the results of the peer review data. The recommendations are, however, in many cases of such a nature that they address several themes. Therefore the recommendations have not been organised in such a way but instead the IPR team divided them, 29 in all, in three categories according to the target group: (1) Recommendations to TKK management; (2) recommendations to TKK Dipoli with a view to complying to TKK’s strategies; and finally (3) recommendations to TKK Dipoli’s management and staff. The 14 recommendations that the team considered most pertinent are bolded.

4.1 Recommendations to TKK management

- 1) **An advisory board should be established for TKK Dipoli on which are represented - at a senior level - a cross-section of Departments within TKK. The purpose is to strengthen the relationship between TKK Departments and TKK Dipoli. In addition, to avoid excessive meetings, with the board should be combined an industry representation to identify needs and enhance the personal connections with industry at the same time.**
- 2) **TKK Dipoli has an excellent record in initiating desired developments in TKK and in CE in general. It should be secured that TKK Dipoli can continue incubating new initiatives whether**

they are local, global or virtual particularly in instigating the Innovation University by taking advantage of TKK Dipoli's extensive global and European networks, knowledge management, and experience in enhancing innovation. Old educational practices will not work for a truly innovative university.

- 3) **TKK management must be sure to**
 - a) **correct the financial issues and communicate with enough detail to identify where changes need to be made;**
 - b) **separate the facility responsibilities; and**
 - c) **stay focused on the future.**

4.2 Recommendations to TKK Dipoli in complying with TKK strategies and activities

- 4) TKK Dipoli should have the value statement. It would help to maintain and focus the strategy and to motivate the personnel. Also, TKK Dipoli's mission should be commonly agreed to further harness engagement of personnel.
- 5) **The strategy work should be continued and finish up TKK Dipoli's own, dedicated internal strategy and its implementation plan. Also, creating division of tasks for personnel to realize the strategy should be more clearly formulated. It should also contain a clear marketing strategy for all external and internal customers. For realization, there should be clear definition of roles, responsibilities, feedback structures and rewards of personnel. The personnel's ways to interact, track projects and to document should be coherently defined. An interface should be developed between the external lecturers and TKK Dipoli in order to develop pedagogical tools and good practises for development and realization of the pedagogical strategy.**
- 6) Realising the TKK Vision 2015:
 - *Helsinki University of Technology is an internationally respected and attractive university known for its excellent achievements in research and teaching, its ability to renew itself and its social impact.*
 - *It is a trendsetter in its field in cooperation with universities of excellence and innovative corporate partners.*
 - *Its students, researchers and teachers are chosen from among the best in all countries.*

[TKK Strategy 2015]

TKK Dipoli is doing well with the first two ideas of TKK Vision 2015. It is proposed that TKK Dipoli should consider using experts of foreign origin as staff members and educators when possible.

- 7) TKK Dipoli's contribution to implementing TKK's strategic objectives:
The following objective concern TKK Dipoli directly:
The university will also develop its continuing education services in the field of technology in order to meet the needs of graduates to acquire new areas of expertise.

and can be developed through the following points:

- The starting point is that every single discipline represented in Helsinki University of Technology should reach at least a good international level and ensure sufficient research and postgraduate education for continuous renewal. [TKK Strategy 2015]

There are plenty of important results of TKK Dipoli's international projects that are not fully utilised in other parts of TKK. It is therefore proposed that TKK Dipoli should engage in active internal marketing related to results acquired during the international projects to relevant people in other parts of TKK, especially in the TKK departments. E.g. a number of e-learning related issues would be particularly important since digitalization is one of the key strategic themes until 2015.

- 8) *- During its strategy period 2007-2015, the university will intensify its research particularly in the theme areas of the strategic national clusters of excellence defined by the Science and Technology Policy Council, i.e. energy and environment, metal products and mechanical engineering, the forest cluster, the information and communications industry and services, and health and well-being. to achieve an internationally high level of research [in these fields of study] during the strategy period. [TKK Strategy 2015]*

TKK Dipoli should also focus to these fields by e.g. relating the e-learning experiences and projects with these topics and departments thus enhancing TKK's international reputation on these fields also from the adult education point of view. The competitiveness of Finnish universities can be secured not only through research on those selected fields but to a great deal through their continuing education and their networks with industry. TKK should therefore promote and exploit this advantage in implementing its internationalization strategies and allocate some regular basic funding to TKK Dipoli's international operations in order for TKK to keep pace with tightening competition on international higher education markets.

- 9) *- Selection of research projects will take into account scientific standards, technological relevance, challenging targets, partnerships with comparative international research and business and industry, and the needs of Finnish business and industry in global competition.*
- Alongside with global networking, cooperation with the best technology universities in the Nordic countries will be intensified.
- Helsinki University of Technology takes an active role in looking for and selecting high-standard international partners for research and educational cooperation. [TKK Strategy 2015]

TKK Dipoli should check if it could collaborate with the international partners named strategic partners of TKK including the Nordic ones or other international partners that many of the departments use as international benchmarking partners. The TKK Dipoli management should also participate in the evaluation of TKK's partners and check if unit-level agreements with most reputed partners could be changed to be TKK-level agreements.

- 10) *- Helsinki University of Technology wishes to promote internationalisation in its education and training without forgetting the status of the domestic languages in the syllabus.*
- By 2010 all departments will be able to offer at least one English-language Master's degree programme. [TKK Strategy 2015]

TKK Dipoli should include more internationalization topics in its training. This means intercultural competence training, basics of international business, basics of international marketing etc. TKK Dipoli should help developing of the international master programmes in English language by sharing its pedagogical and e-learning expertise.

- 11) - *Students and teachers are strongly encouraged to use opportunities for international exchange and practical training. [TKK Strategy 2015]*

TKK Dipoli should offer its personnel possibilities to go for mobility or training in their partner institutions abroad, especially to those in which adult education business is running well and profitably. 20 per cent of the TKK personnel should do this every year according to the objectives set by the Ministry of Education for higher-education institutions.

- 12) - *The students and the staff must also recognize the importance of international mobility in their own operations.[TKK Strategy 2015]*

This is well done by the TKK Dipoli's international project work. It is proposed that TKK Dipoli should check whether activities could be done so that they would qualify for internationalization statistics (KOTA). TKK Dipoli should also check what those members of personnel who do not participate in the international project work or mobility think of the international dimension related to their work.

- 13) - *In the increasing competition, Helsinki University of Technology must be able to attract talented students and top researchers from all over the world with its high-level research and up-to-date supply of education and training. Applications will be attracted by investing in and promoting external communications with the aim of increasing the number of talented applicants and, in some sectors of technology, the number of female applicants in particular. [TKK Strategy 2015]*

TKK international student services, international alumni activities and TKK Dipoli should check the possibilities of cooperation in international marketing. It is further proposed that TKK Dipoli should check how non-Finnish speaking people can find its services. It is proposed that TKK Dipoli should help other parts of TKK to be active in social communities on the Internet.

- 14) TKK Dipoli should help the International Student Services team of TKK by
- passing all the contacts acquired during TKK Dipoli's international activities to TKK International Student Services to be used for international marketing in order to reach a greater number of foreign engineers willing to take a master's or doctoral degree in Finland;
 - considering TKK's mobility and research partners as partners for the international project work in order to expand the joint activities with these institutions and to better focus all TKK's activities to selected strategic partners; and
 - asking to pass information related to TKK's mobility, curriculum development and joint research efforts within TKK Dipoli's current partner institutions.

4.3 Recommendations to TKK Dipoli management and staff

- 15) Well-developed and well-documented work processes, as an essential part of a coherent quality system should be taken to use in TKK Dipoli. A dedicated quality process should be established in all the levels of activities in TKK Dipoli to create a dedicated and profound set of measurement instruments for realization and monitoring the strategy and its further development.
- 16) **Staff appear to be divided between those working on course development and delivery (essentially income generating) and those working on external projects, which may not be fully self-financing and depend on using generated income. The established review and approval mechanism should be consolidated to ensure that participation in projects is and is seen to be beneficial to the mission of TKK Dipoli and to be cost effective.**
- 17) **TKK Dipoli should improve its internal knowledge management systems so that they can provide unified information flows in all levels of the organization so that customer satisfaction could be guaranteed both internally and externally. They should also be better exploited to readily provide the crucial financial figures well updated every month. A team should be established to research how to utilize the information stored in Vintage more efficiently and a quality process should be established where Vintage's connection to realization of the strategy is investigated and its results marketed to the staff (a first step is the personnel's active participation to the Vintage associated quality process development). Personnel should be motivated to feed all the necessary information that could be achieved if they could learn how to efficiently use that information.**
- 18) To respond to the need to improve the performance of the information management system there are two options: 1) to develop a new system with own staff, not sub-contacted or 2) to buy a system and adapt it with own personnel. In both cases, experts for analysis, development and maintenance should be contracted full time. An Information Systems deputy director should be appointed. Another possibility could be combined with the software available in the market. Software from UPV should be analysed in order to test the possibility of transferring covering costs.
- 19) **The staff should be informed of the results of regular management meetings in all levels and a clearly functional feedback forum should be established for staff for discussing the work carried out in the managerial meetings.**
- 20) **TKK Dipoli management should prepare a business plan for each product and customer segment from the marketing perspective and to set up a turnover and a profit target, and communicate them frequently to all the personnel and divide them so that every personnel member can understand what his or her task in relation to these objectives.**
- 21) **It is necessary to make a change in TKK Dipoli's business from product orientation to process orientation. There are too few products to sustain the number of administrative staff. It would improve sharing economies of scale among product lines. Marketing, promotional material design, registration, income management, information, information systems, certification and evaluation, rooms booking & logistics are processes generating economies of scale - not rendering immediate savings but creating sustainability and scalability. These support processes should be shared between projects, not replicated for each product.**

- 22) There is a need to centralise immediately the marketing system in TKK Dipoli. The information of the TKK and TKK Dipoli alumni must be incorporated in one CMR system. All the registry entrees should be classified by interest areas. Specific promotion through mail and e-mail must be exploited to get the complete registers of the potential customers and old customers. Marketing should not be outsourced or decentralised. A specific Marketing deputy director should be appointed.
- 23) TKK Dipoli should do a market study and study the importance of its current customers and set objectives related to future national and international customers and clearly communicate those results to personnel. It should also identify its national and international competitors.
- 24) TKK Dipoli should decide on sales and profitability targets per customer segment and divide the sales and profit targets also related to current and potential products.**
- 25) TKK Dipoli should make a marketing communication plan including personal sales, PR, sales promotion and advertising activities (direct, mass, internet).
- 26) TKK Dipoli should see the costs related to international projects as investments to the future and to the international reputation of TKK, but the amount of money used to these activities should be covered by the profits made by TKK Dipoli or from some other financial source.**
- 27) TKK Dipoli should discuss with TKK management whether some of the activities related to e-learning and pedagogical advising could be handled like internal sales inside TKK
- 28) TKK Dipoli should carefully check that all the international project work is published so that it would be included also in Science Citation index expanded or Social Science Citation Index.
- 29) TKK Dipoli staff showed different levels of involvement in the centre's strategy plan. Some staff had varying degrees of productivity related to the core activities of the centre. A plan for training and motivating the non-managerial staff could be prepared to improve the productivity and participation of staff. The LLL plan of the staff should be drafted based on TKK Dipoli's strategy and personal development plans of the personnel. The staff should make its utmost to deeply and widely understand TKK Dipoli's programmes and service provision in order to create such relationships to the companies providing the content for learning so that the related know-how could be better integrated to TKK Dipoli's own processes and substance know-how.**

5 Glossary

CMR	Customer Relationship Management
Dipoli	the building where Dipoli is located in
EFQM	European Framework for Quality Management
IPR	International Peer Review (process/team)
LLL	Lifelong learning
TEK	Finnish Association of Graduate Engineers
TKK	Teknillinen korkeakoulu - Helsinki University of Technology
TKK Dipoli	Continuing Education Centre / Lifelong Learning Centre of TKK
UPV	Valencia Technical University, Spain

6 Annexes

6.1 Annex 1: Rector's Invitation letter to the IPR team



April 26, 2007

Prof. John P. Klus
University of Wisconsin - Madison

Letter of Appointment for the Expert task force for International Peer Review of TKK Dipoli's Activities

Dear Professor Klus,

Universities are playing a unique and pivotal role in knowledge-based societies. In addition to traditional top level research and high level teaching duties the academic world is challenged to develop new activities within the frame of lifelong learning and the third mission of universities.

In order to be a forerunner in meeting these challenges Helsinki University of Technology TKK considers a review of its Lifelong Learning Institute Dipoli (TKK Dipoli) to be timely and justified and its outcomes useful because the scope of TKK Dipoli's activities is extensive in this area. The precise scope, nature and quality of the activities are, however, not systematically documented. The results could be utilized for the benefit of the whole TKK as well as more widely used in its national and international operations, if a proper stock would be taken.

Therefore TKK has decided to carry out an international peer review of TKK Dipoli's activities. A specific expert task force is thus kindly been requested to accept the invitation to undertake the task. Professor John P. Klus (University of Wisconsin – Madison, USA) is being requested to chair the review team with the following international and domestic expert members.

Director Mervyn Jones, Imperial College, UK;
Prof Alfredo Soeiro, University of Porto, Portugal;
Director Patricio Montesinos, Valencia Technical University, Spain;
Director Matti Hirvikallio, the Finnish Association of Graduate Engineers TEK, Finland;
Prof. adj. Timo Korhonen, TKK, Finland; and
Dr. Minna Söderqvist TKK, Finland.

The review report should be submitted to TKK no later than November 30th 2007. The expenses of the review team will be covered by TKK Dipoli.

An outline for the review task is attached.

Matti Pursula
Rector

Encl.

International Peer Review of TKK Dipoli's Activities

Framework of the peer review:

3. Based on the recent benchmarking by the Finnish Higher Education Evaluation Council (FINHEEC) Ministry of Education has awarded TKK with the status of a quality university (Centre of Excellence) in adult education for the years 2007-2009. The statement serves as a good starting point for the international review.
4. The review should cover all the activities of TKK Dipoli with a particular view to the strategic and international dimensions of them.
5. It should, however, focus on TKK Dipoli's present national and international activities and their role and impact from following perspectives: (a) TKK's goals, strategies and general activities, (b) TKK Dipoli's goals, strategies and other activities, (c) the goals set for a few most important projects and other activities.

Objectives of the peer review:

5. To identify TKK Dipoli's activities' strategic status (role, tasks, quality and impact) in comparison with international leaders in university continuing education.
6. To create, as a result of the review process, premises and recommendations how to continuously measure the productivity and quality of these activities.
7. To define the target status of these activities and to draw up recommendations how to reach the targets. Based on the recommendations TKK Dipoli can adopt a validated quality action plan.
8. To help those working in TKK Dipoli's international projects as well as TKK Dipoli's management commit to set targets and working methods so that the activities serve the implementation of TKK's strategies.

Methodology of the peer review:

1. The review method needs to be practical. This is to direct the actions that are necessary to secure TKK Dipoli's activities' profitability and effectiveness.
2. The Review team manages the process. They should evaluate the exploitability of these actions as part of TKK's strategy.
3. An important area to be reviewed is TKK Dipoli's international activities. These need to be documented following the criteria proposed to the Rector according to which the results of TKK Dipoli's international activities could be reliably and validly measured. The gathered information forms the base line for this part of the review.
4. The review is carried out by exploiting documents and interviews as well as live and online meetings.
5. In addition to the documents and interviews the team should exploit their prior knowledge and experience of TKK Dipoli without, however, jeopardising the impartiality of the process.
6. The Review Team will be assisted by a secretariat provided by TKK Dipoli.

6.2 Annex 2: Timetable of the IPR process

April 2007	The invitation letter to the team leader and to the team members was sent.
May	The documentation of TKK Dipoli strategies, organisational issues, services, quality assurance mechanisms was prepared and gathered by TKK Dipoli staff for the reviewers.
June	<p>TKK Dipoli prepared a tentative itinerary for the evaluation process and organised the hearings for the IPR team visit.</p> <p>The review team visited TKK Dipoli on site and interviewed TKK management, academic staff of TKK, Dipoli senior management and selected staff and a representative selection of TKK Dipoli stakeholders</p> <p>The team drafted criteria for data analysis and adopted a work plan.</p> <p>The virtual workspace was set up for the team.</p>
June-July	TKK Dipoli staff provided complementary information and data for the IPR team to exploit.
July-August	The international members of the IPR team convened in Madison Wisconsin and launched the first iteration of the comparative EFQM analysis of a selected number of CEE institutions.
September	<p>The first draft of the report was produced based on contributions from the team members.</p> <p>The chair of the IPR team visited Dipoli for the second time. The second meeting of the IPR team was held partly live and partly as an online audio meeting.</p>
October	<p>The second draft of the final report was produced.</p> <p>The second audio meeting was held.</p> <p>TKK Dipoli management conducted the second iteration of the EFQM self-analysis.</p>
November	<p>The third and fourth audio meetings of the IPR team were held.</p> <p>The report finalised and submitted to the Rector of TKK.</p>

6.3 Annex 3: Interviews conducted by the IPR team

Representatives of TKK and TKK Dipoli

TKK, TKK Dipoli and adult education in TKK

Rector Matti Pursula

Vice Rector Kalevi Ekman

TKK's 3rd Mission

Professor Kauko Viitanen and other members of the TKK Strategic Task Force on the 3rd mission

TKK Dipoli's operational environment and its strategic role

Director Markku Markkula

Training and learning services as TKK Dipoli Business

Management team members:

Deputy Director Kirsti Miettinen

Chief Training Manager Kalevi Köninki

R&D Manager Tapio Koskinen

TKK Dipoli activities & cooperation with the faculty of TKK

Staff members Seija Hämäläinen, Anniina Hukari and Olli Hyppönen

TKK Dipoli CE programme planning and implementation

Staff members Lisbeth Edlund, Arja Andsten, Eva Holmqvist

eLearning & international projects in TKK Dipoli

Head of international projects Matti Sinko and R&D Manager Tapio Koskinen

TKK Dipoli Support Services

Support Services Manager Kari Salkunen, staff members Jarno Uusitalo and Mauri Virtanen

TKK Dipoli Conference Services

Congress Manager Mervi Kivistö

Catering services of Sodexo

Division Director Anne Koskinen and Area Manager Virpi Tallbacka,

Customers & Partners & TKK Dipoli's own activities in continuing education

Otaniemi Strategic Development

CEO Jouni Honkavaara, Otaniemi Marketing

Vice President Jaakko Tarkkanen and Area Development Director Vesa Taatila, Laurea University of Applied Sciences

Mr. Pertti Vuorela, Technopolis

Innovation University & Policy Issues: National level (Parliament, Government)

Member of Parliament Jukka Mäkelä

Nokia as a Customer
Senior Development Manager Minna Takala

CE in other Finnish Universities
Professor Kauko Hämäläinen, Director of Palmenia Centre for Continuing Education, University of Helsinki

Tekes – Finnish Funding Agency for Technology and Innovation
Executive Director Markus Koskenlinna
Director Kari Komulainen, Global Operations: International Technology Cooperation

Small and Medium Size Enterprises as Customers
Chairman of the Board Kristian Jaakkola, Efecte Ltd

TEK Finnish Association of Graduate Engineers
Director Kati Korhonen-Yrjänheikki, Education and HR
Manager Career Services Sari Taukojärvi

6.4 Annex 4. TKK Dipoli comparative self assessment tables

6.4.1 Self-assessment of TKK Dipoli and seven other technical universities

Table 2: DAETE / CEE Self-assessment model applied to TKK Dipoli and a number of selected technical universities in Europe and the US are presented in this table.

DAETE / CEE SELF-ASSESSMENT MODEL V. 4.1 SUMMARY TABLE

Benchmarking TKK Dipoli & other top-universities 4.11.2007
BETA TEST 2, September 2007 version 3.10

ENABLERS		Maximum points	UNIVERSITY / DAETE CEE LEVEL & POINTS - SUMMARY OF TEST RESULTS 2.11.2007															
			TKK Dipoli		University A		University B		University C		University D		University E		University F		University G	
Criteria / Sub-criteria			LEVEL	POINTS	LEVEL	POINTS	LEVEL	POINTS	LEVEL	POINTS	LEVEL	POINTS	LEVEL	POINTS	LEVEL	POINTS	LEVEL	POINTS
1	Leadership	100	3,9	77	4,0	80	3,2	64	3,6	72	3,0	60	4,0	80	3,0	60	2,4	48
1a	Development of vision and mission	25	4	20	4	20	3	15	3	15	3	15	3	15	3	15	3	15
1b	Continuous improvement of management systems	15	3	9	4	12	3	9	3	9	3	9	3	9	3	9	3	9
1c	Leadership and external relations	20	4	16	4	16	4	16	4	16	3	12	4	16	3	12	2	8
1d	Leadership and motivation	40	4	32	4	32	3	24	4	32	3	24	5	40	3	24	2	16
2	Policy and strategy	100	3,3	65	4,3	85	3,3	65	3,3	65	3,3	65	3,3	65	3,0	60	2,3	45
2a	Mission, vision, values and strategic planning	25	3	15	5	25	4	20	4	20	4	20	3	15	3	15	3	15
2b	Formulating strategic planning	25	3	15	4	20	3	15	3	15	3	15	3	15	3	15	2	10
2c	Designing, communicating and validating the strategic plan	25	4	20	4	20	3	15	3	15	3	15	3	15	3	15	2	10
2d	Implementation of policies and strategy and updating the strategic plan	25	3	15	4	20	3	15	3	15	3	15	4	20	3	15	2	10
3	People	100	3,0	60	4,0	80	3,5	70	3,5	70	3,3	65	3,8	75	3,3	65	2,3	45
3a	Human resource management	25	4	20	4	20	4	20	4	20	3	15	4	20	4	20	2	10
3b	Competence development of the staff	25	3	15	4	20	3	15	3	15	3	15	3	15	3	15	2	10
3c	Staff commitment and involvement	25	3	15	4	20	3	15	3	15	4	20	4	20	3	15	3	15
3d	Internal communications	25	2	10	4	20	4	20	4	20	3	15	4	20	3	15	2	10
4	Partnerships and resources	100	4,5	90	4,5	90	3,8	75	3,0	60	3,5	70	2,0	40	2,8	55	2,0	40
4a	External partnership management	25	5	25	4	20	4	20	3	15	4	20	3	15	3	15	2	10
4b	Economic and financial management	25	5	25	5	25	4	20	4	20	3	15	2	10	3	15	2	10
4c	Technology management	25	4	20	5	25	4	20	3	15	4	20	2	10	3	15	2	10
4d	Information and knowledge management	25	4	20	4	20	3	15	2	10	3	15	1	5	2	10	2	10
5	Processes	100	3,2	64	4,7	94	3,5	69	3,6	71	3,5	71	3,8	76	2,8	56	2,1	43
5a	Demand analysis	15	4	12	5	15	3	9	4	12	3	9	3	9	3	9	2	6

5b	Programme design and delivery	12,5	5	12,5	4	10	4	10	3	7,5	4	10	5	13	3	7,5	3	7,5
5c	Analysis of the competition	10	3	6	4	8	2	4	3	6	3	6	2	4	2	4	2	4
5d	Communication and marketing	15	2	6	5	15	4	12	4	12	4	12	4	12	3	9	2	6
5e	Infrastructure and logistics	10	5	10	4	8	4	8	3	6	3	6	4	8	3	6	2	4
5f	Administrative and financial management	12,5	2	5	5	12,5	4	10	3	7,5	3	7,5	4	10	3	7,5	2	5
5g	Quality control	15	2	6	5	15	4	12	4	12	4	12	4	12	3	9	2	6
5h	Certification	10	3	6	5	10	2	4	4	8	4	8	4	8	2	4	2	4
Points awarded total for enablers		500		356		429		343		338		331		336		296		221
RESULTS		Maximum points	TKK Dipoli		University A		University B		University C		University D		University E		University F		University G	
Criteria / Sub-criteria			LEVEL	POINTS	LEVEL	POINTS	LEVEL	POINTS	LEVEL	POINTS	LEVEL	POINTS	LEVEL	POINTS	LEVEL	POINTS	LEVEL	POINTS
6	Customer-oriented results	200	4,3	170	4,1	162	4,2	167	3,6	142	3,9	154	3,5	138	2,6	104	2,4	95
6a	Programme content and programme creation	75	4	60	3	45	4	60	4	60	4	60	3	45	3	45	3	45
6b	Programme delivery	30	4	24	5	30	5	30	4	24	4	24	3	18	3	18	2	12
6c	Student services	25	4	20	5	25	3	15	2	10	4	20	5	25	1	5	2	10
6d	Learning facilities	30	5	30	5	30	5	30	4	24	3	18	3	18	2	12	2	12
6e	Logistical support for programmes	20	5	20	4	16	4	16	3	12	4	16	3	12	3	12	2	8
6f	Customer service	20	4	16	4	16	4	16	3	12	4	16	5	20	3	12	2	8
7	Staff oriented results	90	2,6	46	4,6	82	3,6	64	3,6	64	3,6	64	4,0	72	3,1	56	2,0	36
7a	Staff satisfaction	40	2	16	4	32	3	24	3	24	3	24	4	32	2	16	2	16
7b	Quality of staff	50	3	30	5	50	4	40	4	40	4	40	4	40	4	40	2	20
8	Society oriented results	60	4,8	58	3,8	45	3,0	36	3,5	42	3,0	36	2,0	24	2,0	24	2,0	24
8a	Image	10	4	8	4	8	3	6	4	8	3	6	2	4	3	6	2	4
8b	Social responsibility	15	5	15	3	9	2	6	3	9	3	9	2	6	1	3	2	6
8c	Impact	20	5	20	4	16	3	12	4	16	3	12	2	8	3	12	2	8
8d	Sustainability	15	5	15	4	12	4	12	3	9	3	9	2	6	1	3	2	6
9	Key performance results	150	2,5	75	4,4	132	3,4	102	3,4	102	3,4	102	2,7	81	3,0	90	2,4	72
9a	Financial	60	1	12	5	60	4	48	4	48	4	48	3	36	3	36	3	36
9b	Academic	45	3	27	4	36	3	27	3	27	3	27	2	18	3	27	2	18
9c	Quality	45	4	36	4	36	3	27	3	27	3	27	3	27	3	27	2	18
Points awarded total for results		500		349		421		369		350		356		315		274		227
Grand Total points awarded		1000		705		850		712		688		687		651		570		448

6.4.2 Cost-effectiveness in training delivery of TKK Dipoli and three other universities

Table 3: Comparing productivity of TKK Dipoli and three other universities based on revenue / student learning hour in US \$

Criteria - Continuing Education	TKK Dipoli	University A	University B	University C
Total Revenue	10,750,000	13,000,000	7,584,000	20,083,000
Number of Staff	85	65	15.8	107
Total Student Learning Hours (SLH)	270,000	215,000	7,575	472,490
Revenue/SLH	40	60	1,000	42.5
Revenue/Staff	126,000	200,000	481,000	187,690
SLH/Staff	3,180	3,300	481	4,416
Total Costs	8,929,000	13,535,000	783,000	9,335,000