This strategic plan is based on several internal meetings at Faculty ITC, where analyses and discussions on research, education and business affairs were conducted by different groups of faculty members based on past and current performance. Reference was also made to a recent self-evaluation report on ITC’s research performance (2006-2009), as well as a research assessment report (Rummel et al., 2010). I would like to thank those who participated in the internal discussions for their inputs and reflections, all of which have contributed to this strategic plan. I would also like to thank the Faculty Council for its constructive remarks.

With the merging of ITC as the sixth faculty within the University of Twente (UT), we are faced with the continuing challenge of smooth integration. There is also the need to transform ITC into a more professional organization, in order to meet the challenges generated by the changing demands of our society.

Faculty ITC is heavily dependent on a subsidy from our Ministry of Education, Culture and Science. Given the many unknowns concerning the future budget allocation, it is uncertain to what extent we will be able to fulfil our ambitions during the next five years. Irrespective of the funding situation, we must strive to improve the quality of our research, education and capacity building in order to maintain a centre of excellence in our fields of expertise. To ensure future financial stability, we need to become less directly dependent on the ODA-related subsidy by diversifying our financial basis.

The faculty management structure, rules and conditions will be outlined in a separate implementation report (to be completed early 2011). In this document, base funding investment scenarios will be sketched in preparation for the budget calculations for 2012. The overall aim of ITC is to continue all its activities, not reduce its portfolio of activities. Simultaneously, we will implement the regulations and management systems used by the UT.

Tom Veldkamp
WHAT’S FACULTY ITC ALL ABOUT?

GEO-INFORMATION MANAGEMENT, WORLDWIDE AND INNOVATIVE
One of humankind’s greatest challenges is to achieve an appropriate balance between developing natural resources and maintaining a healthy natural environment. To meet this challenge, we need, among other things, detailed and reliable geo-information and geo-information management tools.

At the Faculty of Geo-Information Science and Earth Observation (ITC), knowledge of earth observation and geo-information management is being developed and extended and is readily available. By means of education, research and project services, we contribute to capacity building in developing countries and emerging economies. These countries are often referred to as ODA (Official Development Assistance) countries, based on a statistic compiled by the Development Assistance Committee of the Organization for Economic Co-operation and Development to measure aid. In doing so, considerable attention is paid to the development and application of geographical information systems (GIS) for solving real-world problems. Such problems can range from determining those places at risk of landslide, mapping forest fires and biodiversity, planning urban infrastructure, implementing land administration systems, and monitoring and analysing food and water security, to designing a good wildlife management system or detecting environmental pollution.

The key words characterizing our activities are geo-information management, worldwide and innovative. We concentrate on earth observation, the generation of spatial information, and the development of data integration methods. Furthermore, we provide tools that can support the processes of planning and decision making for sustainable development and the alleviation of poverty in developing countries and emerging economies.

ITC: SIXTH FACULTY OF THE UNIVERSITY OF TWENTE
On 1 January 2010, the International Institute for Geo-Information Science and Earth Observation (ITC) became embedded as the sixth faculty in the University of Twente (UT). Through the integration, ITC has become firmly embedded in the Dutch academic education system, while the UT will be able to profit from ITC’s international experience and network. ITC is a sui generis (one of its kind) faculty because of its capacity building mission.
WHERE DOES FACULTY ITC STAND?

A CHANGING WORLD
The world is facing the effects of global change and the ongoing growth of its population. Globalization continues to transform our world into an increasingly interdependent system, linking developed and developing countries more than ever before. Development is increasingly dominated by the interference of global and local transitions. These local transitions do not always contribute to sustainable development – particularly in developing countries. Global challenges are all related to the ambition to stimulate more sustainable development. This aim focuses essentially on the sustainable use of land, water, natural resources and energy, while simultaneously increasing rural and industrial production for our growing and wealthier population. This trend of population growth in a globalizing world has led to an increased number of vulnerable places in rural and urban areas, where disasters and other crises can occur. This vulnerability often stems from unforeseen complex interactions of human and environmental systems. Too often disasters and local problems are attributed to lumped causes such as climate change, while in reality they are caused by local and regional interactions of the complex coupled human environmental system (GLP, 2005).

There is a clear need for spatially explicit solutions for our changing world and that is why ITC works on “Space for global development”. Under this motto, ITC aims to serve society by providing and developing relevant spatial information technologies to facilitate the societal transition from 2D (maps) to 3D (the whole Earth) and 4D (in time) information and governance. This service can be effective only when we base our activities on the societal demands and needs of developing countries. We need to incorporate the needs and demands of (potential) users in our target countries, because it is these needs that shape the way ITC can make a difference.

HIGH TECH WITH A HUMAN TOUCH IN EARTH OBSERVATION AND GEO-INFORMATION PROCESSING
The generation of geo-information and end products is fundamental to understanding and predicting conditions concerning primary resources, human activity, hazards and environmental problems. This poses questions related to determining the optimal use of “Earth as a place to live”, dealing with the symbioses between the transport axis, major underground works (tunnels, storage etc.), recreational areas, residential and working areas, industrial activity, energy plants, agricultural and natural (renewable and non-renewable) resources sectors, and primary resources in the broadest sense (not only energy and non-renewable resources but also water, soil, building materials etc.).

Over the past decade, the field of earth observation and geo-information science has been characterized by greater focus on “understanding processes” rather than by its more traditional “inventory” orientation. Inventory-oriented science has benefitted from new operational sensors. In particular, we note the advance of hyperspectral sensors, the development of LIDAR and radar sensors, and new platforms of earth observation integration. Many spatial processes play a role in shaping our environment, and geo-information science is increasingly able to describe and predict their effects. This enables GIS to provide relevant information support for planning and policy making. Understanding and modelling processes is more than combining and analysing different data in a common georeference: the underlying factors and principles are complex and can be difficult to constrain and comprehend. Expert knowledge is needed more than ever where process-oriented problem solving requires a sound basis of factual data.

Modern users range from disciplinary experts to teams of experts and non-experts that are engaged in participatory forms of planning and decision making. Over the past decades, we have also seen the gap closing between earth observation (i.e. satellite observation of the Earth), which provides the monitoring capability, and the GIS and modelling worlds, which provide geospatial solutions. Thematically, the focus on system Earth has shifted from monitoring and forecasting change to adapting to change. This brings the human component and human perception into the picture. Questions such as “How is the global Earth system changing?” and “What are the primary forces that act on the Earth system?” are now evolving into questions such as “How does the Earth system respond to natural and human-induced changes?” and “What are the consequences of change in the Earth system for human civilization?” To answer these questions, high-tech solutions must be combined with human responses: earth observation and geo-information technology combined with social sciences can lead to scientific breakthroughs.

Furthermore, governance of space has developed over the past years and earth monitoring is now conducted in a structured framework of international policies and governmental initiatives. The GEOSS 10-Year Implementation Plan identifies earth observation priorities in so-called societal benefit areas, including disasters, health, energy, climate, water, weather, ecosystems, agriculture and biodiversity. These are tackled using a combination of space-based data and high-resolution in situ data, providing a powerful combination for effectively addressing management issues. These societal benefit areas line up with the UN Millennium Development

1 Examples are the Global Monitoring for Environment and Security (GMES, [1]) programme of the European Commission and the European Space Agency (ESA), and the Global Earth Observation System of Systems (GEOSS, [2]) initiative supported by 83 governments, the European Commission, and 58 intergovernmental, international initiatives.
Goals and may dominate the international agendas in the years to come.
For each of these societal benefit areas, a number of essential variables have been defined that can be observed and monitored using earth observation data and then integrated in models, for example:

- for disasters: topographic parameters, geology, seismicity and surface deformation, heat fluxes and land surface temperature
- for health: air and water quality parameters, land use, and population density and migration
- for climate: various atmospheric parameters and terrestrial parameters
- for water: water fluxes and storage
- for ecosystems: biodiversity, species diversity, the fragmentation of ecosystems, LAI, canopy architecture and biomass
- for agriculture: crop type/production, livestock, land cover changes, soil type and nutrient status
- for urbanization: the total urbanized area, population density, slum occurrence, transport, and issues related to land tenure.

The European contribution to the monitoring of essential variables is provided by means of ESA’s Sentinel missions. Two instruments foreseen in the near future are a C-band SAR system and a new “superspectral” instrument. In addition, there are Earth explorer missions that contribute to the monitoring of specific parameters – in particular, the Gravity field and steady-state Ocean Circulation Explorer (GOCE) mission, the Soil Moisture and Ocean Salinity (SMOS) mission, and possibly the BIOMASS mission if this mission is selected. Alongside, GFZ and DLR are developing a hyperspectral spaceborne instrument that is due for launch in 2014 under the Environmental Mapping and Analysis Programme (ENMAP). Similarly, NASA is planning some 15 satellite earth monitoring missions in its Decadal Survey programme [3] and several fast turnaround missions focusing on innovative research areas in the Earth System Science programme. Furthermore, NASA is developing a range of missions to observe climate-focused absolute radiance, to measure surface soil moisture, and to monitor surface deformation and surface hydrology.

Besides the thematic application fields in programmes such as GMES, GEOSS and other related and relevant earth observation and geo-information initiatives to which ITC can contribute, there are plenty of other challenges, related to both technical issues and programme metrics, which need to be faced. There are technical issues relating to the lack of timely availability of data in a user-ready format. Often there are issues of scale, where global-level data may not be readily scalable to the local level required for local policy development and decision making. In addition, there is a constant need for standardization, leading to unified products that can be routinely used in modelling. Data assimilation is now common practice in weather forecasting and hydrology, but there are still many geoscientific fields where this is not the case and where substantial contributions can still be made. New sensor types that will shortly have a presence in space include hyperspectral remote sensing, while multispectral and full-waveform LIDAR are anticipated in the longer term. Hyperspectral techniques can retrieve geophysical, biophysical, soil physical and water quality parameters on a global scale. Multispectral and full-waveform LIDAR poses technical and scientific challenges, but potentially allows the estimation of above-ground biomass and productivity through vertical profiles of NDVI and PRI. The increasing resolution and revisit rate of thermal sensors allow better separation of temperature and emissivity, which in turn results in better predictions of land surface temperature, an important parameter for retrieving evapotranspiration. On the other hand, land surface temperature is essential in the Earth Radiation Budget. This again has many applications in geohydrology and agriculture, as well as in monitoring volcano activity, urban heat islands and other hotspots. SAR systems will remain important drivers of earth observation monitoring campaigns in the years to come, owing to their unique all-weather capabilities and their ability to retrieve a wide range of parameters, including soil moisture, wind speed, topographic attributes and surface deformation. Aspects that can be further explored include polarimetric SAR, multi-polarization retrievals and the use of SAR for retrieving canopy parameters. With the renewed focus on global mapping and the use of earth observation data in large-scale models, a number of generic approaches are important.

During the past decade, we have also seen the further development of generic (statistical, mathematical, logic) methodologies to deal with uncertainty and limited precision. Particular emphasis has been laid on the effects of uncertainty on the input data in earth observation products, on model output that is applied within different scenarios, and on a quantitative assessment of changes in space and time. In this domain, there is an increasing role for spatial statistics and spatio-temporal visualization. Typical questions that need to be further addressed in the near future concern issues related to scale, such as generalization, uncertainty analysis, the further integration of field and earth observation data, and error propagation. With ITC’s focus on local and regional scale issues, both upscaling and downscaling of observations and processes remain a primary focus, where our technological approach is one of both assessing the effects of global change at local level and contributing local drivers to the global debate.

FROM CAPACITY BUILDING TO CAPACITY CREATION
The aim of ITC’s international activities is the exchange of knowledge for capacity building and institutional development in
developing countries and emerging economies. In this field of capacity building, new agendas (WRR, 2010; AWT, 2010), new actors (developing economies) and new thinking (GLP, 2005; WOTRO, 2010) are emerging, offering new possibilities for ITC to continue its capacity building mission. A main shift in this new thinking is the call for a more businesslike approach, with emphasis on return of investment, whereby a larger role for the private sector is advocated (AWT, 2010). This does not mean that the primary focus will be on financial issues only, but every investment, be it time, student dedication or individually tailored approaches, should at least be evaluated for its returns and rewards.

In general, education and capacity building in the Netherlands are moving towards innovation and transition management. Innovation activities are organized into so-called knowledge or innovation platforms where different players representing different stakeholder groups collaborate. The four key partners that should ideally be present are referred to as the KENGi partners (acronym for (1) knowledge institutions, (2) entrepreneurs and business partners, (3) non-governmental or civil society organizations, and (4) government bodies; the final “i” indicates the goal of working together – innovation (Latesteijn & Andeweg, 2010)). It was recently proposed that such partnerships should also be sought in development programmes. ITC will explore the feasibility of this approach in ODA countries.

There has also been a plea to focus Dutch development aid and collaboration more sharply on a limited number of the poorest countries, addressing such themes as agriculture (land use), water, civil society and HIV/aids prevention, where there is a strong Dutch tradition as well as established international recognition (WRR, 2010). Fortunately, ITC has a well-established reputation with regard to the spatial dimensions of these fields of recognition (Rummel, 2010).

On the other hand, knowledge institutions such as universities are encouraged to establish partnerships with partners in developing countries. Such collaborations should strive for a more innovative type of approach (as described above), with the aim of spreading and implementing state-of-the-art and tailor-made knowledge and creating business opportunities by initiating business incubators. The capacity building goal is to organize this in such a way that the traditional brain drain is prevented and an effective brain circulation is established. It is not suggested that knowledge institutions in developed countries should develop knowledge and the partners in developing countries should implement this knowledge. It is suggested that these joint collaborations should aim at joint knowledge development based on the specific context found in developing countries. Within this context, the UT slogan (Universiteit Twente, 2009) “high tech with a human touch” acquires an additional socio-cultural dimension. ITC will aim at high tech with a human touch in a developing context.

In order to join in with these current developments, ITC will gradually, by trial and error, transform its capacity building effort into a capacity creation programme. We will link our knowledge development to market development by involving the whole value creation pyramid. By doing so, we will use the most recent insights in innovation and transition management not only to co-create with KENGi partners context-specific knowledge but also to create a user market that will hopefully speed up local spatially explicit solutions to globalization problems. This will require not only research activities with local partners concerning the context-specific solutions but also training and education activities with non-university partners in order to build up the required local knowledge infrastructure and business opportunities. Only by establishing such a knowledge infrastructure can brain-drain effects be turned into brain circulation. This approach is a step towards “solving” the wicked problem of sustainable development (Veldkamp, 2010). ITC will contribute to the process towards a more sustainable world.

ITC’s mission is to contribute to the sustainable development of developing countries. We do this by jointly creating and exchanging spatially explicit knowledge and by developing a sustainable organization, infrastructure, methods and human capital. ITC will not present solutions but will supply ingredients for the processes towards solutions.

STRIVING FOR EXCELLENCE

ITC has a dual ambition: it wants to maintain and extend its position as an academic centre of excellence in geo-information science and earth observation, and also be a centre of excellence in training and capacity building in less developed (ODA) countries. ITC considers both targets equally important for future development. Within the UT context of developing triple O skills (Onderzoek [research], Ontwerp [design] and Organisatie [organization]), we consider capacity building to be a typical organization skill and a strength of ITC. To address the whole value pyramid, ITC will therefore continue to offer non-academic courses such as refresher courses and GFM4-type courses. To stimulate the entrepreneurial skills of our students, we need to include more entrepreneurial skill developments in our curriculum.

We also consider research and education to be strongly interconnected activities, both of which are necessary and contribute to the capacity building mission. We will therefore develop typical key performance indicators (KPI) for all our three main activities.
RESEARCH

Research is taking place more and more within the context of international collaboration, with the increasing mobility of knowledge. Most emerging economies are also emerging science nations. Countries such as Brazil, India, China and South Africa invest heavily in science and technology. Scientific careers and development are increasingly based on international brain circulation. Nowadays, research capacity development crucially depends on international partnerships and exposure. Developing countries, often lacking an adequate research infrastructure and an enabling research policy environment, suffer from substantial brain drain. Another global trend in research is that many research donors encourage interdisciplinary research that is inspired by the needs of society or is explicitly problem- and solution-oriented (WRR, 2010; AWT, 2010).

The development-oriented mission is ITC’s trademark. ITC’s success is founded on its mission, and this mission is also the main characteristic that distinguishes ITC from other research institutions. ITC combines remote sensing and geographical information for various fields of application relevant to ODA countries. This will continue to be a highly relevant research field in the foreseeable future. Mission and focus are the best recipe for maintaining and strengthening ITC’s research profile. In addition, ITC will attempt to attract the brightest students from ODA countries to pursue MSc and PhD degrees at the UT.

ITC’s research will consider greater integration with open-source software platforms. This will not only provide ODA countries with the tools to achieve their scientific and technological development but will also offer the tools to contribute to global development in general.

Integration into the UT has automatically strengthened ITC’s position in Dutch academia. So far ITC has been a welcome partner for a number of Dutch universities by bringing in complementary expertise and by delivering PhD students. In the future, ITC will be a competitor for funds. Visibility will certainly increase when NWO funds are acquired. The ambition of ITC is to become a national centre of excellence in the fields of remote sensing and geographical information and its selected fields of application (e.g. biodiversity, water cycle, disaster management, urban development, governance and geo-exploration).

To establish the international position of ITC within the global academic field, an external research assessment committee (Rummel, 2010) evaluated ITC’s research performance over the period 2006-2009. It came up with a set of recommendations, which, combined with an internal self-assessment and a SWOT analysis, led to the following strategy statements:

- ITC will maintain its distinctive mission.
- ITC will maintain the established cooperation with other Dutch universities but develop a new *modus operandi* based on equal partnership.
- ITC will, like a quasi-independent graduate school, maintain its PhD programme during the next five years, and will become a member of the Twente Graduate School.
- ITC will undergo a stepwise transformation over the next five years, becoming a research institute within the UT. ITC research groups (researchers) will become members of a national research school or institute for quality control. Research funding will be directly handled by ITC.
- A careful analysis will be made to determine the optimal number of PhD students, based on three criteria: (1) resources, (2) working load in terms of supervision, quality of research and conditions for the students, (3) financial security.
- Publication activity of research staff in high-standard international journals will be encouraged and facilitated.
- High-quality external funding (NWO, ERC, EU, ESA, WB etc.) will be actively encouraged by providing financial incentives.
**HOW WILL WE ORGANIZE RESEARCH?**

There will be one portfolio holder research, who, on behalf of the Faculty Management Team, will manage the research bureau. All UDs, UHDs and professors will spend at least 30% of their time on research-related activities. It is the responsibility of each department to obtain sufficient paid research time (this is the sum of first, second and third research money flows) to make this possible.

All researchers will be required to meet the performance indicators set by their chosen research school or institute. Research management will have quality as the leading principle (accountability), in order to strive for excellence.

Research will be organized on two levels: faculty and department.

- Each department will formulate its own research agenda for the coming years for fundamental research, based on the latest developments and trends, with regard to the best evaluated research themes (Rummel, 2010). Poorly evaluated research themes will be discontinued.
- There will be one ITC-wide umbrella research theme that is interdisciplinary in character.

Key performance indicators for ITC as a whole and for the six departments:

- Number of peer-reviewed papers and/or book chapters per fte research input
- Number of PhD theses per full professor fte research input
- Percentage of externally funded postdoc and staff research projects of total research capacity.
EDUCATION AND CAPACITY BUILDING

ITC works on capacity building in developing countries and emerging economies using training and knowledge development within its science domain, geographical information systems (GIS) and remote sensing. ITC offers MSc and diploma courses in Enschede or jointly with partners in developing countries.

ITC has a very specific target group – students from developing countries (ODA) – and this factor distinguishes its programmes from other Dutch MSc programmes. Because of subsidy regulations and scholarship limitations, the ITC MSc programme has its own schedule, which allows students to complete their MSc within 18 months of the starting date. To achieve this, ITC students get extra support in a student-friendly study environment. The MSc programme is not open to Dutch students. The initial knowledge base of this specific ODA target group is highly varied and extra staff-student interaction hours are needed to accommodate this heterogeneity. The specific case of many students from different cultural backgrounds, far away from friends and family, also requires an additional service effort to facilitate the education process. These boundary conditions make ITC’s MSc teaching input more intensive and more expensive than that required by a regular Dutch MSc programme.

One positive outcome of this longstanding educational tradition is that ITC has a unique track record in multicultural teaching, both in the Netherlands and in developing countries. ITC aims to maintain this multicultural teaching environment and to exploit it as a unique selling point in attracting new students, scholarships and programmes.

ITC needs to establish a better position in the Dutch education market. It will therefore embark on activities to explore the expansion of its operations without compromising its aim to contribute to capacity building and education in ODA countries. For example, it will actively explore the possibility of a national MSc GIS as a continuation of the existing GIMA MSc. ITC is in principle willing to lead the NVAO accreditation of this new MSc. Because a new Dutch MSc of this kind can potentially have significant consequences for course planning, teaching schedules and methods, a feasibility study will be carried out. There are currently no plans to explore the possibility of a BSc programme.

Within the European context, ITC will explore new opportunities regarding Tempus and related scholarships and continue to elaborate options within the Erasmus Mundus programme.

JOINT EDUCATION PROGRAMMES (JEP)
ITC first embarked on joint education courses with partners throughout the world in 2002. At present, 15 joint courses are in progress and three are under development. Through these JEPs, ITC has a much wider outreach than would be the case if it provided only courses and programmes in Enschede. The JEPs will remain an important instrument for future educational activities. Although the JEPs will be continued, the activities will be phased according to the status and past performance of the collaboration.

Partners in ODA countries such as the upcoming economies China, India etc. demand specific support for PhD training and research. Because research and education are interlinked, this will lead to joint research programmes as a logical follow-up to JEPs.

We will also explore the possibilities for establishing South-South collaboration between the upcoming economies and developing countries where ITC can play the role of capacity knowledge broker.

New JEPs are considered only for partners in the poorest countries or in regions with a low HDI or other relevant development index indicator. ITC’s new capacity building activities will therefore focus mainly on long-term investments in Africa and South Asia. The two UNU Schools will be continued as UNU-ITC thematic programmes with goals clearly related to capacity building and linked to their subject domains: land administration and disaster risk management. ITC’s contribution will be decided based on objectives, existing education programmes and infrastructure.
HOW WILL WE ORGANIZE EDUCATION?

There will be one ITC-wide education and capacity policy. There will be one portfolio holder education who, on behalf of the Faculty Management Team, will manage the education bureau, while the portfolio holder business affairs will implement the capacity building projects.

All UDs, UHDs and professors will spend at least 30% of their time, and teachers 80%, on activities related to education and capacity building. It is the responsibility of each department to obtain sufficient paid education time (this is the sum of first, second and third research money flows) to make this possible.

Education management will have quality as the leading principle (accountability). Staff performance in education will be reviewed annually. This requires individual staff performance to be evaluated by students. This also implies that introductory education courses are obligatory for all new staff (Basis Kwalificatie Onderwijs). Refresher courses are obligatory for all other teaching staff.

We will aim for more efficient and sustainable programmes, with less contact hours and more distance education approaches.

Key performance indicators for education for ITC as a whole and for all courses:
- Course evaluation scores:
  - Students’ overall satisfaction with course quality
  - Students’ overall satisfaction with learned skills
  - Students’ overall satisfaction with quality of teachers
- Success ratio (% of students finishing course)
- Student – teaching input (fte) ratio.

Key performance indicators for capacity building education for ITC as a whole:
- Ratio total number of students from ODA countries to basic subsidy
- Ratio total number of trained staff to number of JEPs
- Total number of distance learning students.
TOWARDS A FULLY INTEGRATED FACULTY

For almost 60 years, ITC has been an independent higher education institute with its own regulations, rules and culture. Now that ITC has become the sixth faculty of the University of Twente (UT), it will have to modify and adapt its procedures, rules, and most importantly its culture. Our aim is to modify the organization in such a way that it fits the UT as well as our own changing attitude (culture change).

Quality will be the leading principle in the future management of the ITC faculty. This requires a clear formulation of quality criteria and performance indicators. Our aim is transparent decision making with a clear focus and well argued choices.

We will strive towards an open transparent accountable organization. This implies that we will have to approach our activities with a more businesslike attitude, where people are given responsibilities and made accountable for pre-agreed outcomes. Decisions about capacity building, research and education will be made based on the strategic plan and the basic assessment, if ITC can afford it. The key management units are the six departments where research, education and capacity building tasks come together, where trade-offs are made, and where ends have to meet.

The roles and responsibilities of faculty and department management will be clearly established. A rotating scheme of Faculty Management Team portfolio holders and department heads will add to the flexibility of the structure and will hopefully strengthen the mutual understanding of the different roles.

Our attitude towards our students will also shift, acquiring a more businesslike approach, but will remain highly dedicated and personal. Students are our clients, with their own needs and responsibilities. This implies that students are partly responsible for their own affairs and decisions. ITC will critically re-evaluate current tailor-made micro-management of student affairs such as scholarships, finances, housing and family matters, and will coach students to take greater care of their own affairs. Of course, ITC as faculty and the UT as host will provide the necessary infrastructure (visas and housing) to support students in studying in Enschede according to the code of conduct.

REDUCING SUBSIDY DEPENDENCY

ITC will strive to become less dependent on the direct subsidy from the Ministry of Education, Culture and Science.

To ensure realistic monitoring of the ITC money flow, budget allocation and monitoring will be conducted on the Euro basis (in accordance with UT systems) instead of the fte basis. Full-time accounting based on contract hours is required to obtain meaningful management information and to be able to run external projects. Therefore every employee is obliged to participate in time accounting.

Our ambition is to limit the (co-)funding of MSc and PhD students from our core subsidy to a minimum. Instead we will aim at obtaining more external funding for capacity building and education, as well as for research activities, including postdocs. The balance between internal and external funding must always be evaluated from a long-term perspective in order to prevent over-commitment to co-funding (see very crude sensitivity analysis in Veldkamp, 2010).

Within the Netherlands, NWO and other Dutch academic funding opportunities will be more fully explored. As regards education, ITC will strive to develop, together with other relevant Dutch universities, a GIS MSc programme for Dutch students that will be funded as a “normal” Dutch MSc.

Within Europe, we will further explore opportunities for additional EU funding for our education (Erasmus Mundus, Tempus etc) and research (Framework Programmes, ERC) activities.

Key performance indicators for business affairs for ITC as a whole:
- Ratio external funding to basic (internal) funding
- Percentage of accounted time on recognized (research, education and capacity building) activities
- Ratio scientific staff to support staff
- Ratio temporary to permanent staff.
LITERATURE

