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SUBMISSION TO THE EUNIS ELITE AWARD FOR EXCELLENCE

wwwUNEL

Integrated information systems
supporting institution-wide strategic and operative planning and follow-up processes

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THE GOALS OF THE PROJECT

The background to the project lies on the complexity and inconsistency of the annual planning, budgeting and funding processes at Helsinki University of Technology (HUT).

The goals of the project are

- To merge the previously tedious and separate processes for strategic planning and target setting, budgeting and funding into one streamlined and unified way of managing organisational operations towards long-term common goals.
- To create more added value on all organisational levels from this new and transparent way of implementing organisation-wide, strategy-driven structural and operative planning, execution and follow-up.
- To integrate process-driven IT-support in a www-environment.
- To bring both the new way of working and its IT-support into use in September 2000.

THE ENVIRONMENT

Administrative constraints

The complexity and inconsistency of the processes demanded a lot of human resources but did not create the expected university-wide applications and benefits. The principles for funding were not clearly derived from organisational strategies and targets, and strategies were not connected to or visible in operative planning. The planning, follow-up and data gathering

processes were rather time-consuming while producing incorrect and incoherent data of slight relevance - at worst, the processes did not turn up anything useful from a management point of view.

Moreover, the whole process furthered a philosophy of centralised governing and delegation with very little room for dialogue. In short, this way of working was tedious but compulsory and, as it was more or less disconnected from real world actions and needs, it was considered a waste of time.
The identified problems and triggers in the beginning of the project were:

- the way of working was considered as a compulsory and time-wasting routine
- the strategic phase of planning was non-existent and disconnected from the rest of the planning
- plans, the real world and funding did not meet which made the distribution of responsibility even harder
- planning, preparation and documentation was not coherent or in any way unified between the units and thus, producing incomparable and incomplete data for budgeting and funding
- planning and information gathering was concentrated to the last few weeks of the year, hence producing immense extra loads on human resources involved. The load was even more increased as the process was executed manually
- more human resources were used for information gathering than for strategic, operational and structural planning and analysis
- no public, real-time, transparent information and document management system was available to the management
- a huge data warehouse was available but practically almost unused because no management or working processes actively utilised its contents.

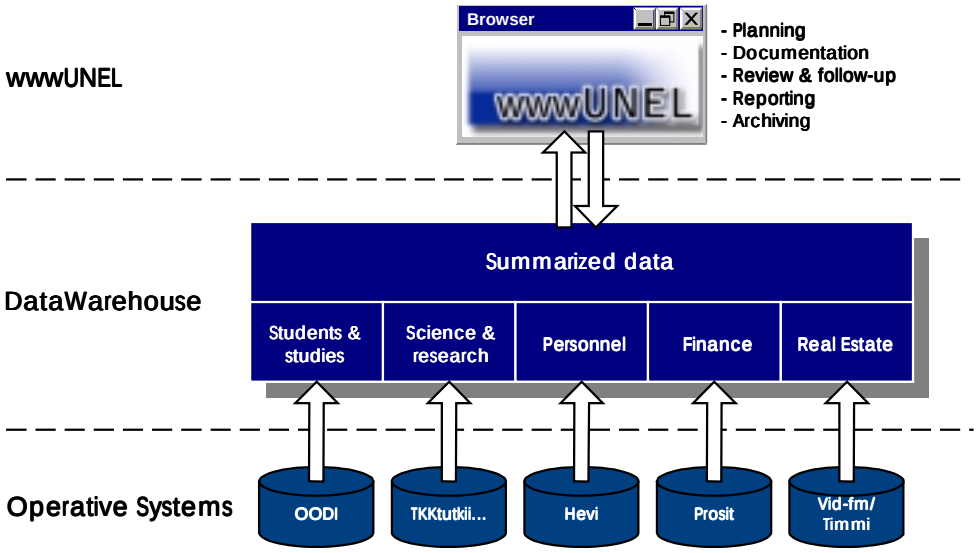
Technical constraints

The IT-solution that was to be designed to support the implementation of the new processes had to meet the following 3 requirements:

1) It had to be an *internet-application* in order to support a geographically independent way of participating in the process – windows-technology did not meet these requirements. An internet-application is also easily manageable as no local client installations would be required. Simply, it had to become an integrated part of the *intranet* of the institution and embody appropriate safety standards.

2) It had to be *integrated with the existing data warehouse* and *effectively* put the current contents of the data warehouse into use. In practice this implied similar, if not identical, data structures and data entities as well as solutions for how to manage data that was not present in the data warehouse. It also implied an overhaul of the registering processes of the operative systems as well as the transfer and update timetables of the data warehouse.

3) Last but not least - it had to be an *easy to use* and *fit-for-purpose* tool providing nothing more nothing less than expected and this at the time, in the form and to the person that expected it. If the tool failed to meet these requirements the users would become discontented and hence refuse to use the application which would endanger the successful introduction of the entire process.



Picture 1. The architecture of the information system.

Financial constraints

The entire Finnish university sector is battling with a coarse financial situation – the requirements on the educational output are steadily growing while the government funding is kept on a static level. This financial situation had without any doubt its impact on the scope of this project as funding is primarily targeted towards education and research and only as a second priority towards internal development.

The project received its priority mainly because of three reasons:

1) This development project was targeted at unifying the different organisational units around common goals and focusing their activities on achieving the goals agreed upon. Hence, the organisation would have the processes and tools to co-ordinate its efforts, structures and use of scarce resources towards reaching strategic targets that will increase organisational efficiency and awareness and hence cost savings.
2) Being the first to undertake such effort to develop organisational management would have a positive impact on the image and profile of the university which in turn, positively affects both external and internal interest groups.
3) Maybe, this project will produce results that can be transferred to another institution, hence produce cash inflow and payback.

THE PLANNED SCENARIO OF THE PROJECT AND ITS ACTUAL STATE

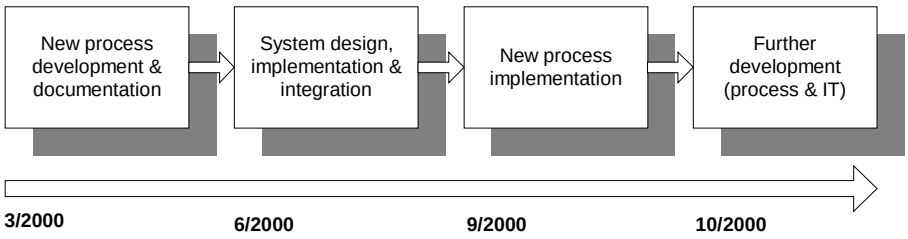
The planned scenario

If the goals of the project were reached it would have the following impact:

- strategic awareness would be visible in operative plans and follow-up actions
- a constructive dialogue, de-centralisation and openness would occur between parties involved in target setting, planning and follow-up

- planning and target setting would result in public, to-the-point documentation
- through the streamlining the total work load associated with planning and information gathering would be distributed evenly throughout the year
- the fulfilment of targets could be followed up quarterly for all organisational units
- information would be gathered and reported to respective interest groups automatically
- information system design would integrate necessary operative systems into a process-integrated web-solution for strategic planning and follow-up.

The primary phases and timeline for the project were:

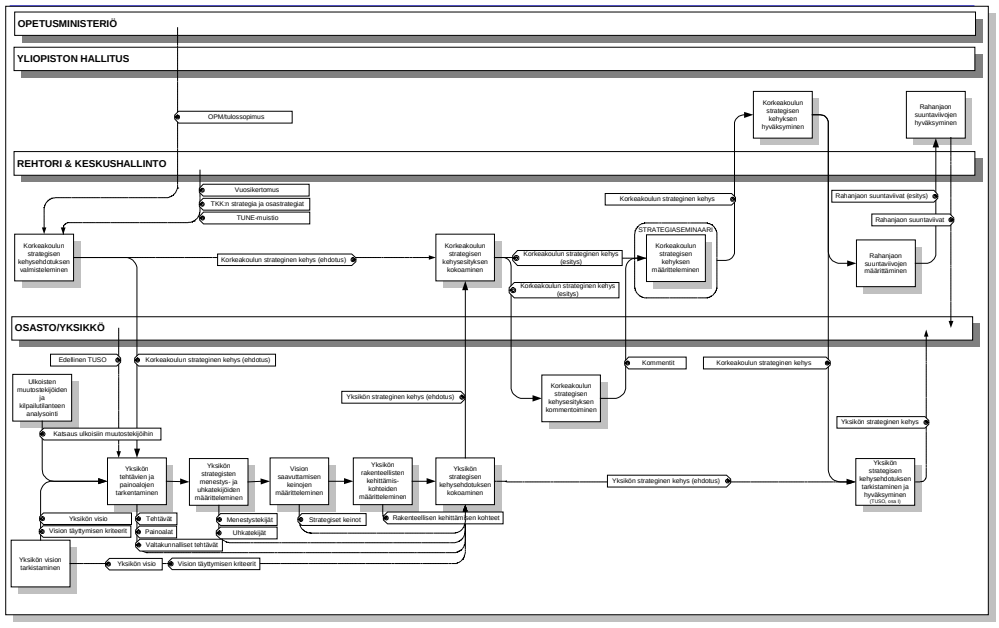


Picture 2. Project timeline and phases.

The actual state of the project

At the end of the year 2000, the project has reached the following state:

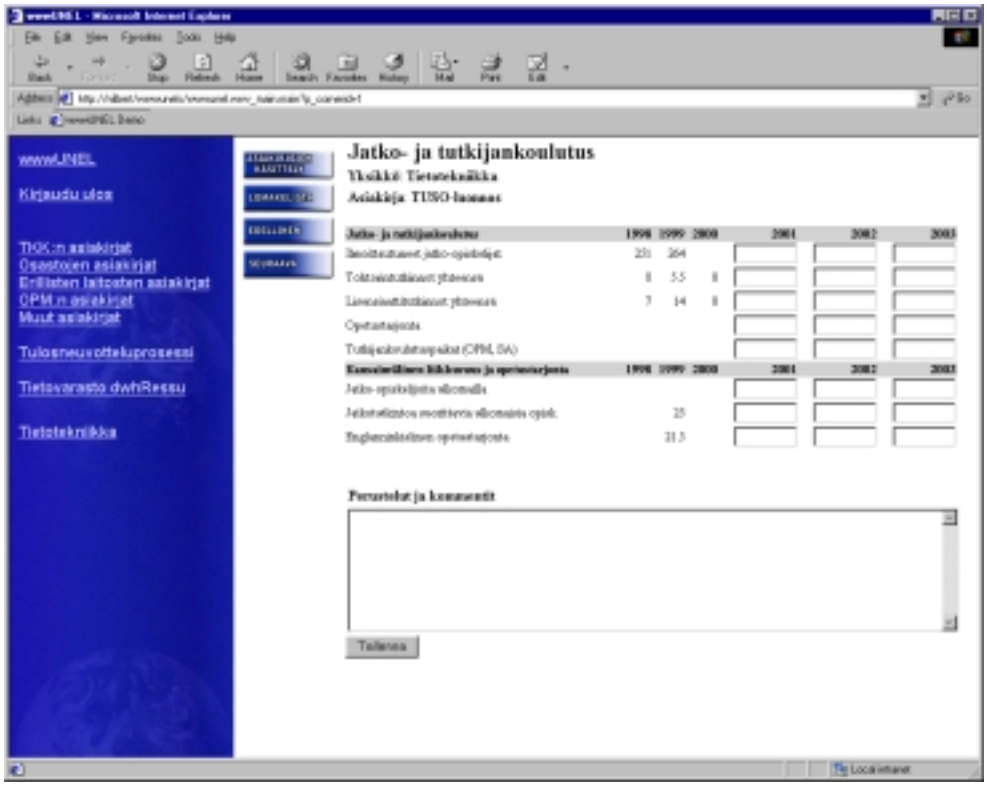
- emphasising de-centralisation, new strategic planning, target setting and funding negotiation processes have been developed and documented. These new processes have been used for the first time in the year 2001 planning and funding negotiations between the Rector of the University and its departments.



Picture 3. One of the many re-designed processes; here depicted in the form of a process chart.

- The entire information flow management between the parties interacting in these annual processes has been handled through the newly developed, internet-based wwwUNEL-information system. All the information created in the process is also stored in this same system. Currently the system offers the following support:

  A. *All the forms used in the planning and negotiations processes in electronic format*



Picture 4. One of the unit-specific electronic forms used for target-setting and reporting.

  B. *Work flow support between process actors*
  C. *Archiving mechanisms enabling recurring use of planning information*
  D. *Summary reports and key ratios on all organisational levels, summarising future plans as well as realisation data from past years*
  E. *Real-time connection through a data warehouse to all necessary operative systems and registers (finance, students, personnel, research, real estate) for necessary statistics*
  F. *Management, planning, follow-up and reporting of internally separately financed projects (1/2001)*

THE RESULTS AND THEIR IMPACT

Impact on department level

The process concerned is smoother, more consequent and **relevant** as well as considerably **time-saving**. First of all, planning from now on includes the strategic aspects, so far only dreamt of. Secondly, activities are spread out over the entire year, enabling units to improve their planning-related time management and minimising the last minute panic that traditionally was part of the last two weeks of the year.

Due to the re-designed processes, the prerequisites for planning and implementing the following years' activity was greatly improved as the units received their **funding offers** two months earlier than during previous years.

The units received **pre-filled electronic forms** that contained all the necessary historical information, thus enabling the units to focus on strategic and structural development – not on data gathering and on producing written documentation.

Due to the **internet-based working environment** provided by wwwUNEL, the time spent on preparing and administering of planning related material was minimised, thus enabling the units to focus their effort on their real business (research & teaching), not on bureaucracy.

In order to support the planning and target setting, the units got **real-time access** to data present in the many information systems of the institution through one unified interface – the same interface used for documentation and reporting.

The material received through the process was, with regards to unit-specific individualities, **unified** according to a process-specific **standard**. This improved readability and comparability between units.

As all the documentation concerning the funding negotiations became public to all parties through wwwUNEL-archiving principles, it promoted **transparency** on every organisational level never before encountered to this extent. For the first time, the departments actually became aware of what others were doing and planned to do, thus enabling them to position themselves and their individuality against collective strategies, targets and their fulfilment.

Impact on institutional level

The smoother, more consequent and time-saving process has the same impact on an institutional level as it has on department level: work related to planning and documentation is **spread out** in smaller batches over a longer period of time while the **focus** is kept on structural and strategic decisions.

The first phase of organisational planning, as a result of the decentralisation, is **delegated** to the departments. Hence, their individual targets and plans form a basis for strategies, funding plans and structural decisions on an institutional level.

As the departments create strategies and plans using **unified document forms** containing only the most relevant information, **summaries and overviews** of documents are used for comparisons between departments and years, funding planning, decision-making and follow-up.

The standards provided by wwwUNEL unify documentation procedures between units, **enhancing readability and transparency**.

As a consequence of the unified documentation standard and the concise timetable the funding negotiations based on these documents were focused on the **long-term structural issues** affecting the future, not on short-term details.

As the collection of statistical data was **streamlined and automated** a minimal amount of human resources were needed for information gathering and distribution of the data to the units. Through these arrangements the data warehouse was opened to **every-day use** on the department level. The further development of the data warehouse will be directed by these planning and follow-up processes.

FURTHER DEVELOPMENTS

The redesigned working processes and wwwUNEL were brought into use in September 2000, and end-user feedback is continuously gathered. Encouraged by the amount of positive feedback further development plans were put into action in October 2000. The next steps are:

A. **Support for handling of the internally financed projects** involving the development of project initialisation, budgeting, funding and follow-up routines as well as the design and implementation of necessary IT-support into wwwUNEL. This work is expected to be completed and brought into use by January 2001.
B. **Monthly and quarterly follow-up cycles on all organisational levels**; real-time follow-up of targets in the planning process on an institutional, department and division level. Summary reports are gathered and viewed against targets and budgets on a monthly/quarterly cycle.
C. **Further decentralisation down to the division level;** currently, the process and wwwUNEL are spread out to about 20 units - with the further decentralisation, the number of units involved will be about 120. At the completion of this stage all the departments and divisions are included in the organisation-wide strategic planning and follow-up cycle.
D. **Improved budgeting support**; processes and IT-support for budgeting and funding will be developed for all organisational levels.
E. **Support for planning with scenarios**; what-if functionality will be implemented to support structural planning on institutional level. The primary target is the funding structures and principles which will be based on targets set and achieved by the departments.
F. **Improved data transfer routines between operative systems and the data warehouse** involving development of the registering processes of the operative systems as well as the data interfaces between the operative system and the data warehouse.
G. **Improved tools for the system administrator**; the existing tools for system management (units, hierarchies, users, reports) are to be improved in order to better suit organisational change or new organisational structures.

These development projects should all be finished and brought into use by September 2001.

APPLICATION TO OTHER INSTITUTIONS

The working processes were developed for the use at and according to the needs of Helsinki University of Technology. The wwwUNEL-system was then again tailor-made to fit these processes as well as the existing information infrastructure at HUT.

As a consequence both the process and application are, in principle, only applicable in environments that live by the same processes with the same targets as HUT. As it happens, this is much the case in the Finnish university sector – many institutions battle with the similar problems as those hereby solved at HUT. Therefore, the results of the process re-design work could – in many cases – be transferred directly to other institutions and many such requests have already been brought forth.

From the technical point of view, transferring wwwUNEL to some other institutions is not as simple as the transfer of the processes. wwwUNEL relies on a certain data infrastructure formed around a data warehouse and not too many institutions have such information environments. If such one exists the introduction of wwwUNEL into that organisation becomes easier as the 'only' changes that have to be made will be to fit the current data structure of wwwUNEL to the one in the data warehouse. If no data warehouse exists then it has to be built or rather huge changes in the application architecture have to be made. Both of them will be very expensive solutions.

Irrespective of the existence of a data warehouse, wwwUNEL cannot be brought into use in another organisation without some sort of tailoring. It will mainly be targeted at the contents and structures of the electronic forms, connections to underlying data sources, authentication principles and structures as well as the organisational structures. Tools for managing the organisational and report structures will be developed in phase G (see above). The development of user-friendly tools for the dynamic management of the other tailoring needs will be put off into the future. Until these tools exist, the introduction of the software into another organisation will require tailoring by the software developer.

As a summary, the processes and wwwUNEL may with some specification and tailoring work be introduced to and brought into use at the other 19 Finnish universities – on a global scale, it becomes more complex because both the processes and the application are designed for Finnish environments.