TAUCHI

STRATEGY 2008

Missio

TAUCHI tutkii ja kehittää ihmisen ja teknologian vuorovaikutusta monitieteisesti siten, että ihmisten kyvyt, tarpeet ja rajoitteet sekä teknologian mahdollisuudet sovitetaan mahdollisimman hyvin yhteen.

Tämän saavuttamiseksi TAUCHI

- Ø tekee kansainvälisesti korkeatasoista, empiiristä ja konstruktiivista vuorovaikutuksen tutkimusta, joka kohdistuu muun muassa ihmisen eri aisti- ja ilmaisukanaviin kuten katseeseen, tuntoaistiin, puheeseen ja näiden yhdistelmiin (multimodaalisuuteen), tunteisiin ja kognitioon,

- Ø julkaisee tutkimustuloksensa merkittävissä tieteellisissä lehdissä ja konferensseissa, tuottaa hyödyllisiä palveluita ja sovelluksia sekä esittelee tuloksiaan tiedettä popularisoivilla foorumeilla, ja

- Ø tarjoaa kattavan maisteri- ja jatkokoulutusohjelman.

Mission

TAUCHI carries out multidisciplinary research into human–technology interaction and its development harmonizing the potential of technology with human abilities, needs, and limitations.

To accomplish this, TAUCHI

- Ø conducts internationally recognized empirical and constructive research on interaction through, for example, studies on human senses and expressivity including gaze, haptics, speech and its multimodal use, emotions, and cognition;

- Ø publishes the results of the research through significant scientific journals and conferences, develops useful services and applications, and promotes its results via popular forums; and

- Ø offers comprehensive M.Sc. and doctoral education.

Vision 2012

TAUCHI is a top-level research community that offers extensive education programs in its sector. It attracts competitively both Finnish and international researchers and students. Publication activity has been stabilized at a high level in both quantity and quality. TAUCHI is a reliable and sought-after partner in joint projects.

TAUCHI is at the international forefront of research in its field, which is manifested as a steady publication stream in top forums and as various acknowledgements from the scientific community. The international cooperation network is extensive and of high quality. TAUCHI coordinates several joint projects and is sought after as a cooperation partner in projects coordinated by other parties. One central cooperation partner is the Unit of Human-Centered Technology (IHTE) at Tampere University of Technology. With IHTE TAUCHI has a joint center of excellence that has been selected for the programme funded by the Academy of Finland.

The research brings results that companies, society, and individuals utilize in practical applications and that gain visibility in the media. Results of TAUCHI's scientific research have been utilized in planning or implementation of various commercial products and services. Other researchers refer to research results produced by TAUCHI's researchers. Each researcher participates in at least one publication each year.

In education, TAUCHI remains one of the global frontrunners in its sector and is well-known outside Finland too. TAUCHI attracts talented students, who will after graduating have good prospects in employment. TAUCHI coordinates the UCIT graduate school, which is the main school for graduate students in Finland in its field, and takes part in the activities of other relevant graduate schools. There are also plenty of competent foreign applicants for both the master's programs and the graduate studies.

Researchers participate actively in researcher exchange programs, and long-term visitors with doctoral degrees join TAUCHI on a regular basis. The quality of the researcher exchange is evident in joint publications of the visitors and the hosts.

TAUCHI is a popular and open work community that takes care of the prerequisites for quality work by its personnel. The researcher groups are balanced in that they comprise both researchers with doctoral degrees and graduate students.

Annex 1 contains some indicators that can be used to evaluate how this vision is realized.

Structure

TAUCHI is a research unit of the Department of Computer Sciences at the University of Tampere. It is responsible for planning and implementation of education in the field of interactive technology at all levels (basic studies, subject-specific studies, master's programs, and doctoral education).

TAUCHI's research is organized into the work of the following research groups.

- Emotions, Sociality, and Computing Research Group (Prof. Veikko Surakka)

- Multimodal Interaction Research Group (Prof. Roope Raisamo)

- Speech-Based and Pervasive Interaction Research Group (Docent Markku Turunen)

- Visual Interaction Research Group (Prof. Kari-Jouko Räihä)

Each group is led by a person with at least a docent-level qualification. The number and composition of the groups can be altered, as necessary, if there are changes in research subjects and financing.

Each research group is responsible for planning its own activities. The group leader acts as the superior of the researchers in the group. The superior of people holding teaching posts is the head of the department.

The management group of TAUCHI consists of the leaders of research groups and the coordinator of the UCIT graduate school, who acts as the management group's secretary. The management group discusses issues concerning the entire unit, coordinates its activities, and allocates preparatory responsibilities associated with matters that relate to the unit.

TAUCHI has a leader (Kari-Jouko Räihä) and deputy leader (Roope Raisamo). It is the leader's duty to manage the activities of the management group. The deputy leader acts as the deputy.

Research

TAUCHI's research is planned in thematic research groups that are managed actively. Each group has a research program, which documents the group's research themes and objectives. The research programs are in TAUCHI's internal use, but, when applicable, they can also be presented to cooperation partners and the sponsors of the research.

These research programs guide the search for financing and cooperation partners. The objective is that TAUCHI or its research groups first construct a good, focused plan. Then appropriate partners are invited along, and their duties or the wishes for them are specified. If TAUCHI is asked to participate in projects coordinated by other parties, the participation is evaluated carefully on the basis of the research plan and the themes included in it.

Each graduate student of TAUCHI has a thesis plan that is updated and revised regularly as the research progresses. This plan specifies the research area, describes the research in a concrete and clear manner, and includes the research schedule. The supervisor of the thesis monitors how the plan is realized, via regular meetings with the graduate student at least once a month. In addition, constituent studies in the thesis are supervised and monitored actively. Writing of research manuscripts is supervised and, particularly in the early stages of the thesis research, the student and supervisor prepare joint publications.

The goal of supervision is to support development of the graduate student's own thinking and to coach the student to become an independent researcher. This requires that the student also be given enough responsibility for his or her own research and learn how to define, implement, and report it. Responsibility will increase toward the end of the research, but from the very beginning it is the student's task to make an

independent plan for carrying out the research and revise the plan on the basis of feedback from the supervisor. The student is also charged with keeping the supervisor aware of feedback from the researcher community (e.g., by supplying the supervisor with feedback received on manuscripts offered on the student's own initiative).

Students seeking a career in research are coached in how to apply for financing after graduation, for example, through their active participation in preparation for new research projects during their graduate studies.

Research carried out at TAUCHI is ethically sustainable. Ultimately each researcher is personally accountable for the ethicality of the research. Sound research management guarantees that all researchers are familiar with the common ethical principles of research and monitors ethicality on a general level (through, e.g., ensuring correct reference practice when publications are being prepared and inspection of individual test frameworks from the standpoint of strain on the participants).

Research results are presented via international forums of high standing. The most important criterion in selection of publication channels is the impact of the forum, in which one takes into account both the citation index of the publication and the central meeting and publication forums of the researchers in the field. The objective is for each publication first to be offered to a journal or a major conference in the research field. In selecting the forum, one also looks at jointly collected information about the quality and duration of the review involved.

An evaluation panel will be established within TAUCHI via which other researchers review a manuscript that is to be submitted and give suggestions for improvement. The panel will work on the reciprocity principle – i.e., a researcher can request roughly the same number of peer evaluations as he or she is prepared to write of other people's manuscripts.

When the research unit is evaluated as a whole, activity in general forums that connect the entire field is important. That is why the CHI conference, for example, is offered publications from several research groups in the unit every year. Forums that are respected across disciplinary boundaries, such as the journals *Nature* and *Science*, publish at least one article by TAUCHI authors during a five-year period.

Active publication activities are made visible. At least an abstract of each publication, and, if publication contracts permit, the entire publication, is offered on the Web, where image and video material related to the publications will be made available. All information concerning TAUCHI's publications and their impact (e.g., the number of references to them) is available to the unit from the Web pages.

Researchers improve not only their specialist competence but also extensive general knowledge of the current research in the HCI sector. For example, people attend lectures held by guests of TAUCHI even if on a different research topic.

Researchers actively follow up on developments in their area of research by reviewing new research results on a weekly basis. The goal is for each researcher to read several publications every month. The Web pages can be used to inform other researchers in the unit of significant new results. Tools provided by the Web pages can also be used to distribute (only inside the unit if necessary) feelings and experiences related to various publications and conferences.

The leaders of the research groups analyze and report their opinions about the frontline and current events in their research area for all researchers in the unit (even outside their own research group) twice a year.

In accordance with the third mission of the university, the researchers also have a duty to report their own research results that are of general interest in a manner that the man on the street can understand, as well as to popularize their research field in publications outside the scientific world.

Education

TAUCHI is responsible for education in interactive technology at the Department of Computer Sciences.

The education provides students at the levels of basic and subject-specific studies with basic professional capabilities to work as experts on usability and user interface design. Basic studies are offered annually in Finnish and in the appropriate manner in English, if necessary, depending on the basic capabilities of foreign students starting their studies in master's programs.

There are two master's programs in interactive technology, one in interactive technology and the other in user interface software development. Most of the courses are taught in English, and the courses in the master's programs can always be completed in English. If necessary, examinations based on English-language literature are arranged.

Courses are made more varied in cooperation with IHTE. The number of courses designed for graduate studies is being increased in cooperation with graduate schools. Contents of studies are constantly made more methodical and improved upon.

Education in the master's programs is connected to research carried out at TAUCHI. Lecturers participate in research, and researchers take part in education. The master's programs give students good research capabilities and the opportunity to specialize in specific sectors of interactive technology.

Course contents are kept up-to-date by incorporating the latest research results. Course content and student feedback are reviewed at regular meetings of TAUCHI yearly. The overall structure of the education program is revised every two years.

Networking and financing

The international cooperation network helps the unit meet its other objectives. Cooperation increases the familiarity of TAUCHI, makes it easier to obtain financing and recruit personnel, boosts publication activities through joint publications, and helps TAUCHI's researchers remain abreast of the developments in the field.

Creation of a cooperation network is an area of focus at all levels. The department, unit, research groups, graduate schools, research projects, and individual researchers all take part in creating connections. Cooperation is sought actively by seeking new partners, holding preliminary discussions, and making short-term visits in many directions. A dialogue connection is sought not only with various sectors of operation, companies, and research institutes but also with dissemination organizations, special-interest organizations, hospitals, day care centers, and other sector-specific expert organizations.

Financing is sought from many sources. The unit begins joint research or other long-term projects after carefully weighing the options. In addition to research projects with separate financing, TAUCHI's researchers establish grassroots connections with interesting researchers in their areas of expertise. Thus they can try out and maintain cooperation even without large projects.

TAUCHI monitors developments in its operating environment and seizes new opportunities as they are offered (such as the alliance of universities in inland Finland and ICT-SHOK).

In research projects, TAUCHI participates in determining the central guidelines. TAUCHI collects and internally shares experiences of cooperation partners.

Cooperation works best when the partners work on the same premises. This is one reason the unit operates flexibly in handling employment matters so that visits abroad can be carried out in such a manner that people have a place to return to in Finland. In projects, the unit favors long-term (6–12-month) visits

that increase openness and create a strong foundation for future cooperation. To cover expenses incurred by such visits, researchers also apply for personal grants.

Foreign visitors are offered work facilities and other necessary resources. An extensive databank will be created for solving accommodation and day-to-day problems of such visitors. Each arriving visitor will have a support person also, making it as easy as possible to start work in earnest.

Personnel

TAUCHI is a smoothly functioning and respected work community that provides reliable employment posts. Its employees work in a responsible manner and are committed to the strategic objectives set. Work content and employment issues are addressed in annual development discussions in which objectives are set for the following year.

Employment contracts are as long as possible – i.e., they are concluded for the duration of the task. The objective is to guarantee a stable work environment in the long term. The research management personnel and individual researcher have a shared understanding of how long financing is guaranteed, even if an employment contract cannot be extended beyond a certain project.

Personnel structure is balanced in the sense that researchers and lecturers at different stages of their careers work at TAUCHI. The goal is for 15% of the personnel to be professors and senior researchers; 25% postdoctoral researchers, lecturers, and senior assistants; 40% graduate students; and 20% students aiming for a basic degree.

TAUCHI actively recruits visitors, researchers, and students. The unit strives to employ both long- and short-term guests from the unit's research areas and new postdoctoral researchers through financing of the "People" program of the Seventh Framework Programme of the European Union (FP7), for example. The unit's research themes are taken into account in recruitment of visitors. There is an effort to add more students to exchange programs.

Professional coordination personnel in projects are an integral part of the TAUCHI staff. Experienced people are needed in searching for new projects and coordinating existing ones, so that tasks can be handled effectively and without too great a burden on the research done by the researchers. Groups actively exchange information related to calls for proposals and coordination. Less experienced applicants are mentored in the early phase.

The management group discusses the personnel situation on an annual basis. If breaks in financing periods are anticipated, the unit aims to retain competent and committed personnel through intra-group recruitment.

Work environment and cooperation

Memos are prepared on management group meetings and sent to TAUCHI personnel. Current events, changes in personnel, and research projects are reported upon in monthly meetings, where issues needing more extensive attention are raised. Everyone can suggest matters for handling by the management group or at the monthly meeting. All staff will participate in the monthly meetings unless there is compelling reason otherwise.

A meeting on development of education is arranged once each academic year. Likewise, a meeting is held yearly to review the overall research situation of TAUCHI and implementation of research plans by the groups, and to come up with ideas for future research projects.

TAUCHI has an open and constructive atmosphere for discussion. One can submit feedback or questions to the management group for joint discussion at the monthly meeting. Stimulation and progress of discussion is supported when necessary via, e.g., small groups.

Meetings of the research groups are held regularly. If there is no particular reason to keep a meeting internal to the group, it is advertised throughout TAUCHI, and members of other groups may attend if they wish.

The research groups form a vertical structure matching research content, but horizontal structures ("special interest groups") are also created for themes that connect the research groups (e.g., mobile applications, constructive research, empirical research, and project preparations).

A support group for new researchers will be created where the members can discuss issues related to research and duties that they find puzzling. Should a young researcher so desire, he or she may be assigned a peer support person who can offer support with acute problems.

Research plans for existing research projects and feedback received on plans and research will be collected on the intranet as appropriate and permissible. Results of research projects will be reported to the whole unit in an appropriate fashion.

Flow of information inside TAUCHI works well. Everyone participates in reporting of issues that relate to the unit. The TAUCHI Web pages are of interest both inside the unit and for different cooperation partners. The pages are used actively internally and they are up-to-date. Cooperation is supported through, e.g., implementation of a group calendar.

TAUCHI organizes social events that bring together most of the personnel. A full-day training and recreation event is held once a year, in the summer.

Annex: Indicators of vision realization

The objectives are presented as target figures for the year 2012, but the intention is to achieve some of the objectives each year.

TAUCHI objective	In 2012
Number of TAUCHI personnel	$n = 45$
Publications	n
International joint publications	$n / 5$
Articles in international media about research at TAUCHI	1
Memberships on editorial boards of international journals	3
Dissertations	4
Master's degrees from TAUCHI's master's programs	25
Financed graduate school positions	5
Countries participating in researcher exchange	5
Units participating in researcher exchange	7
Researcher exchange months (departing)	12
Researcher exchange months (arriving)	12
International top units that participate in close content cooperation	4
Requests to participate in international cooperation projects	5
Significant research projects commissioned	1
Credits obtained by TAUCHI students for IHTE courses	100
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