

## Stepping Up: KMDI's Academic Plan, 2004-2010

### 1.0 Executive Summary

The **Knowledge Media Design Institute** (KMDI) has been identified as a leader in interdisciplinary and interdivisional research and teaching at the U of T. The work of the institute spans both the scientific study of the ways in which knowledge media shapes and is shaped by human activity, and the practical work of founding an interdisciplinary nexus for design of such media. Unique in Canada, KMDI was one of the first of a small group of comparable institutes across the world. Collaboration and innovation are our hallmarks. Our strengths as an institute include 1) the ability to foster interdisciplinary, inter-divisional, and cross-campus research and teaching, 2) innovation in the development of new technologies, and 3) intellectual leadership in bringing important new ideas to the University of Toronto and the broader community. KMDI's location in SGS, outside of any single department or faculty is significant in our ability to work across disciplines, and provides the flexibility that is critical to our ability to innovate.

Working at the intersection of social and human sciences, technology and design, KMDI is in the vanguard of designing, using and critiquing the media and media technologies for the 21<sup>st</sup> century. For the first six years of its eight-year history, KMDI operated as a virtual institute without budget or physical facilities. The launch of our masters and doctoral collaborative program two years ago has greatly expanded our activity, and the institute is now supported with a modest base budget and physical space in the Bahen Center. KMDI members have secured several million dollars of research funding, designed and deployed a major knowledge media technology – ePresence, produced an annual lecture series, created a monthly newsletter with international circulation, a weekly digest of local events, and organized and sponsored several major international conferences and events at U of T<sup>1</sup>.

KMDI has reached a critical stage in its development as an institute. Over the next six years, we expect to strengthen our position as an authoritative voice for constructive, critical commentary and reflection on technology and society, and to take an active role in the shaping of public debate and the development of public policy around these changes. We will continue through our practice to be an exemplar for the design, production and sharing of knowledge in the university, in particular, illustrating how human-centred design practices can make a difference in people's everyday experience of technology. We will continue to build on our international relationships to strengthen our world-class reputation. In collaboration with our academic partners, we will work to improve our ability to admit qualified students who increasingly choose U of T because of KMDI. A series of shared faculty appointments with other academic units to support our graduate program could be mutually beneficial, and during this period we will assess the potential of a stand-alone PhD in Human-centred Design. Our most immediate and pressing need is for additional administrative support. KMDI has an excellent reputation for collaboration and team-based work, and we will expand carefully through partnerships. Several new initiatives are proposed and include partnering with UTM and UTSC in a novel joint undergraduate teaching and research program; an intensification of our collaborations with others to support our collective interest in new forms of knowledge production and dissemination, and changing information practices across the university. In all these goals, funding is a major concern. To this end, we will seek both internal and external sources of funds, and continue to develop innovative funding models to support our mission.

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<sup>1</sup> KMDI has produced 2 international conferences, *The Internet: Towards the Year 2000* (1996) and *Open Source and Free Software: Concepts, Controversies and Solutions* (May 2004). In July, we co-host with FIS, the 8th international *Participatory Design Conference* (PDC04). In Dec.2003, on behalf of the university, KMDI produced the ORION-CA\* Net 4 Advanced Networking Day.

## 2.0 Vision, Mission and Goals

KMDI's vision is to be a leader in bold, ambitious and innovative interdisciplinary teaching and research in the field of knowledge media design.

KMDI builds on a number of intellectual traditions at the University of Toronto: from Harold Innis in the 1940s and Marshall McLuhan beginning in the 1950s to the pioneering work in human factors and research in graphics and human-computer interaction (HCI), the internationally renown Ontario Telepresence Project in the 1990s, research on communities and their use of information and communication technologies (ICTs), social network analysis, social informatics, and information design, simulation and visualization. Working at the intersection of the social and human sciences, technology, and design, KMDI is in the vanguard of the design, use and evaluation of a variety of 21<sup>st</sup> century technologies, and potentially a catalyst for innovation in teaching and research practice across the university. KMDI is also an authoritative voice for constructive, critical commentary and reflection on technology and society, and is active in the shaping of public debate and the development of public policy around these changes. The heart of the Knowledge Media Design Institute is its network of partners and projects, and the social capital and value that it generates through collaboration.

## 3.0 Self-Study

KMDI, the U of T's first virtual institute, is a distributed networked research and teaching organisation with over 65 faculty members from more than 25 departments and faculties on three campuses participating. KMDI had its first 5-year SGS Review last year and received a strong vote of confidence from the external reviewers who recommended that the Institute be continued and strengthened.

"We believe that ... over the next decade new technologies will fundamentally shape how universities operate. The allocation of core KMDI staff would enable the construction of exemplar Knowledge Media supported courses which would serve as a beacon to the rest of the university. Similarly, the self-application of Knowledge Media technologies to support the virtual KMDI community would provide exemplars for the sharing of knowledge within educational organizations. ...with few resources, KMDI has grown to become an interdisciplinary research centre with a very broad base and an international research reputation. If the University of Toronto deems it important to support interdisciplinary research then a modest expansion of KMDI providing core faculty should be a high priority." (*Report of the External Review Committee for KMDI's 5-Year SGS Review, 2002/2003*).

The reviewers acknowledged that there are barriers to success in the way KMDI is currently institutionalized, and noted the dramatic funding discrepancy with the institutions with whom we compare ourselves. In the past ten years, a number of groups have been established in universities around the world that take seriously the issues raised by the rapid proliferation of media technologies in all areas of society. Each is, in some way, concerned with understanding how people interact with each other, their artefacts and their environment; and/or with the design, development, use, and evaluation of ICTs and ISTs (Information Society technologies), and in understanding the implications of these developments in the broader social, and cultural context. The specific research foci, organisational forms and practices of these communities vary. For example, the Oxford Internet Institute (OII) founded in 2001 focuses specifically on the social and policy aspects, while the Knowledge Media Institute at the Open University and the

MIT Media Lab are more technically oriented<sup>2</sup>. MediaX<sup>3</sup>, a recent initiative at Stanford is a campus wide interdisciplinary network with over 200 members that coordinates the study and design of interactive technology. However, the level of funding and the processes whereby they are institutionalizing are fundamentally different than those of KMDI<sup>4</sup>.

KMDI first received base funding in 2002-2003 and appears to be the only institute that has developed 'from the bottom up'. In spite of this our members are invited to keynote at international conferences, our students are participating in a variety of summer institutes, we have designed a knowledge media technology, ePresence, that is used in universities, government, and businesses across Canada and in Europe and which has been used to create award winning knowledge media, and to leverage further research.

### 3.1 Research

From the outset KMDI research has focussed on 4 themes: human-centred design; technologies for knowledge media; knowledge media for learning, and knowledge media, culture, and society. These have resulted in research projects on:

- Human-centred design and development of KM and KM technologies
- Demonstration and evaluation of novel knowledge media applications in specific domains, e.g., eLearning, eHealth
- Social and policy research on community, edemocracy, privacy and surveillance

*Consolidation:* While continuing to respect the broad research agendas of our members and our stated goal of being in the vanguard of ideas in the knowledge society<sup>5</sup>, we identify two areas of specialization in which we have acknowledged leadership, substantial research programs and broad participation across departments, faculties and divisions. These are:

*1. Collaboration: people, practices and technology:* The study of the nature of collaboration, the organisational and management challenges and the design of technologies to support collaboration in elearning, ehealth, ebusiness and training – locally and at a distance – have been central to the activities of the Institute from the outset. This is currently being extended to understanding collaboration in terms of collective knowledge creation, production and dissemination, exemplars of which are the Open Source and Free Software movements. These intertwined movements are arguably two of the most important forces shaping society today in that they extend beyond software and relate to artefacts as diverse as computer software, educational and health content, and digital music, and to the social practices, institutions, and infrastructures of our knowledge-based economy.

*2. Public policy and citizen engagement in the knowledge society:* Knowledge media are increasingly woven into the everyday practices of work and domestic life, raising challenging public policy issues that require a blend of social and technical expertise to address adequately. This specialization builds on existing expertise and experience both with governments at the local, national and international level as well as expertise in engaging citizen interest in such

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<sup>2</sup> <http://www.oii.ox.ac.uk/>; <http://kmi.open.ac.uk>; <http://www.media.mit.edu>;

<sup>3</sup> <http://mediax.stanford.edu/flash/home.html>

<sup>4</sup> E.g., the Vice-Chancellor of the OU established KMi in late 1995 and the 2001-2002 the base budget was £650,000. The OII was established with a gift of 10 million pounds & 5 million from the state. Media X is supported by Stanford's President, Provost, and relevant Deans, each offering guidance and resources to insure its success. A \$25M capital campaign is underway.

<sup>5</sup> The concept of the knowledge society refers to the constellation of changes that have taken place in the advanced industrial economies as knowledge is increasingly understood to be a key resource. Central to these changes are ICTs or ISTs. Knowledge Media (KM) are a specific class of media and media technologies that support and enhance the ability of people to work, learn, communicate, and create knowledge.

contemporary public policy debates as: universal access to the internet, disability access, intellectual property, on-line civil liberties, privacy, digital identity, and new media regulation<sup>6</sup>.

KMDI has been instrumental in providing an environment for developing collaboration that would not likely have happened otherwise. Major projects that support these areas of specialization include: a SSHRC Initiative on the New Economy (INE) Research Alliance program and an award of close to \$1M led by Andrew Clement (FIS) in which KMDI is an academic partner and in which over half of the participating institutions are outside Canada; and more recently a \$4.4M NSERC award (plus \$1.1M from industry) for NECTAR, a network of Canada's leading researchers in human-computer interaction (HCI) and computer-supported cooperative work (CSCW), led by Ron Baecker (CS) to investigate technological and social issues to make computer-supported collaboration more efficient, more productive, and more natural.

*Industry partnerships:* With its focus on real problems in communication and collaboration, KMDI carries out highly visible research that is meaningful to industry. KMDI works to build relationships with industry partners directly, and has a long-standing relationship with the Ontario Centre of Excellence, CITO, which helps build linkages between industry and researchers. These relationships required continuous nurturing and participation on the part of members that goes beyond the actual research funded. We are currently limited in our ability to support faculty, either administratively or technically, in these activities. This is also a limiting factor in pursuing new opportunities. The special relationships highlighted below illustrate what KMDI faculty have been able to achieve, and demonstrate the value added not only to KMDI, but to the university generally.

*Bell University Laboratories (BUL):* KMDI has forged an effective research partnership with BUL that includes sharing of research space and joint sponsoring of events. There is a BUL/KMDI Chair in HCI held by Ron Baecker and two of BUL's Labs are led by KMDI researchers: the ePresence Laboratory and the Collaborative Effectiveness Research Laboratory. KMDI members also participate in the Health Communication Laboratory and the Knowledge Management Lab. KMDI researchers are consistently recognised with research awards from BUL. KMDI has also been a strong partner for BUL, creating an identifiable source of interdisciplinary talent that BUL has frequently drawn upon in its research projects. This will increase as the number of PhD students in the KMDI Collaborative Program increases and current students approach the thesis stage. KMDI has also been credited by BUL as a model for their program. In building close ties with BUL, KMDI has contributed to BUL's decision to continue investing in the University of Toronto.

*IBM:* Several KMDI faculty have a long-term close relationship with IBM's Centre for Advanced Study (CAS) in Toronto. In addition to research support, our students have received CAS Fellowships, and faculty and students have given talks at the centre, participated in a variety of ways in the annual CAS conference, including membership on the Program Committee. This spring KMDI helped facilitate a CAS ARISE elearning course which had participants at 4 sites.

*Public and non-profit sectors:* KMDI researchers have also been engaged in productive research relations with organizations in the public and non-profit sectors. We will expand these activities in the coming years to further reflect KMDI's mandate as a publicly-supported institution, and to make available to the broader community the benefits of university research.

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<sup>6</sup> Examples include: Developing Information Policies for Canada's Information Infrastructure and Canadian Research Alliance for Community Innovation and Networking (SSHRC: Clement), Canadian Network for Inclusive Cultural Exchange (CNICE), (Heritage: Treviranus), Foreign Policy dialogue, (DFAIT: byDesign/elab (Jeffrey)), Citizen Lab (Deibert), Digital Identity Construction (SSHRC:Clement)

*Grant administration, overhead & institutional policies:* We encourage faculty with grants involving more than one academic unit to designate them as KMDI. This has in the past generated significant overhead. As the university works through a period of fiscal restraint and cutbacks, the institutes and centres face a unique set of challenges that extend beyond cuts to base funding. We have already seen increased pressure on faculty to focus their activities (and their overhead) in their home units. Furthermore the home units have fewer resources to support or encourage ancillary activities. A series of incentives is needed at both the department and faculty level (in particular for pre-tenure faculty) that reward them for carrying out interdisciplinary research. Ironically, as the KMDI community grows and the number of grants to cross-disciplinary teams increases, KMDI is receiving less overhead. The recovery of indirect funds from the national granting councils is one potential new source of funds.

### **3.2. Teaching Programs and Environment**

KMDI launched its Collaborative Master's and Doctoral Program in KMD in 2002 with the Faculties of Architecture, Landscape, and Design (FALD) and Information Studies (FIS), and the departments of Computer Science (CS), Mechanical and Industrial Engineering (MIE), and Sociology (SOC). The program is unique in Canada, and one of a select group internationally<sup>7</sup>. With 65 U of T faculty members from 25 departments affiliated with the Institute, KMDI has the expertise, experience, and the desire to place U of T at the forefront of emerging interdisciplinary praxis. The KMDI Collaborative Program prepares U of T graduates for the pervasive new realities of work in the 21<sup>st</sup> C. The program allows students to complement the depth of scholarship in a discipline with focused learning across the disciplines ensuring that *principled interdisciplinarity* is the outcome. The program broadens their marketability in both the public and private sectors. They are positioned to contribute to further innovations in the development and use of knowledge media as well as to critical engagement with the significant issues in contemporary society, and the shaping of public policy and debate.

*Students:* KMDI currently has 22 students – 15 masters and 7 doctoral students. Two students have transferred from Masters to PhD, and two others have graduated to alumnus status. We have well surpassed the figures that the *SGS Collaborative Program Guidelines* recognize as essential to a self-sustaining program (5 new students annually)<sup>8</sup>. The caliber is high, with 8 of the students in 2003-4 holding significant scholarships<sup>9</sup>. Furthermore, program students represent only a portion of our active student body, as our courses are attractive as electives with students from a range of departments beyond the collaborating units, including OISE/UT, Social Work, Public Health, Psychology, Museum Studies, and ECE<sup>10</sup>. The breadth of interest speaks well to our potential to recruit more students to the Program as well as to expand the number of collaborating units. Student course evaluations are good to excellent and comments that the KMDI course is superior to any of the student's home department offerings are not infrequent. The currency/timeliness of KMDI content is important to all students and one of the reasons for coming to the U of T. Students appreciate the value of the KMDI network, and the ability to link their academic, business and or professionals interests to the program. They will

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<sup>7</sup> U of T's Collaborative Program has distinctive features which coupled with the virtual network of colleagues and resources in KMDI, connections with European as well as US programs, offers a unique leadership opportunity. KMi, a sister institute in many ways, does not offer a graduate program.

<sup>8</sup> In our second year of operation, it is difficult to accurately predict future enrollment, but if the current admission rate remains static we can expect, with normal cycles of degree completion and attrition, to reach a steady-state annual average of 40-50 program students by the end of this 6-year period. This calculation ignores the likelihood that new U of T departments will join the program, and the fact that student interest continues to rise as the program develops a greater presence at U of T and currency abroad.

<sup>9</sup> 1 SSHRC, 1 Connaught, 5 U of T Fellowships, and 1 external fellowship. Several KMDI Fellows hold SSHRC grants and one a Vivienne Poy Fellowship.

<sup>10</sup> Of the 120 students enrolled in KMDI courses over the past 2 years, 44 have been program students, 61 come from collaborating units and 15 are from other academic units. .

bring benefits back to the university as future alumni. A number of students have requested a stand-alone degree because they have taken on an extra academic burden in order to be pioneers and leaders in an emerging field and believe it would be better recognize their achievement.

Inquiries and applications for admission come from around the world. The net effect of our program is to increase graduate enrollment at U of T. Participating units benefit in that students must first enroll to become eligible for our program. Several students indicated that they had not considered U of T until they learned about the collaborative program, and one made studying with KMDI part of his successful SSHRC application before enrolling at U of T.

A Graduate Fellows program was initiated in 2002, and today there are 7 senior PhD candidates from four faculties, all of whom are well advanced in their KMD-related research. This Fellowship Program makes it possible for senior students who are working with KMDI faculty, but who are outside the participating units, to be integral members of the KMDI community. Many KMDI faculty currently serve on PhD committees across the departments and faculties in which we have members.

*Future growth:* The priorities for the Collaborative Program in KMD are to build on the momentum of current successes; to secure a number of shared teaching appointments with the goal of moving toward a more autonomous PhD program, and to respond to the Provostial mandate to increase undergraduate teaching (see Section 4.0 New Initiatives for details)

### **3.3 Faculty and Staff**

*Faculty Appointments:* KMDI currently has no faculty appointments. Going forward, a strong argument can be made for the need for KMDI to have shared appointments in order to provide consistency among a dedicated core complement of teaching faculty. This would also allow some of the participating units to make appointments they otherwise wouldn't or couldn't make on their own. CS and FIS, for example, acknowledge the potential of such partnerships in their academic plans.

*Course Buyouts:* Currently, the university allocates \$5K in our budget for each teaching buyout, but in reality the departmental cost of these is \$10-\$15,000. We need a more realistic allocation in our budget for faculty buyouts.

*Staff:* As a design institute our standards are high, but with limited resources for staff the Institute cannot put forward a face to the world that adequately represents the excitement and creativity of the work being carried out. Neither can we afford to 'professionally' design the knowledge media that are being used around the world. We currently have .6 FTE support position that is divided between administrative and technical support. The 2004-2005 budget for KMDI resulted in a staff decrease given the cost of staff increases. We need to supplement this with a part-time Administrative Coordinator, and a part-time web-editor, bringing our FTE to 1.5. We expect this to cost roughly \$75,000 annually, a net increase of \$60,000 to our base budget as it would reduce our reliance on casual staff. This is an issue we need to address urgently. The Collaborative Program is better served with a .4FTE coordinator who now contributes time to the activities of the Institute.

### 3.4 Space and Facilities

Since July 2002, KMDI has occupied a suite of 3 offices in the Bahen Centre for Information Technology (66 nasims). The KMDI/BUL Chair in HCI provides an additional two offices. BUL has also provided infrastructure support to KMDI through labs and grants to individual researchers.

This is a major improvement from our pre-July 2002 situation when we were entirely virtual. We have designed the space to be adaptable and accommodate a variety of uses. However, we clearly need a space for graduate students—to study and to socialize. Without a place of their own, students disperse back to their home departments, undermining the collaborative possibilities that are at the core of our program, and one of the main features that attracted students in the first place.

Through our research activities and partnerships we have been able to deploy an infrastructure that supports at the basic level the kind of services expected in an institute such as KMDI – e.g., wireless coverage, SMARTBoards, videoconferencing. This infrastructure requires continual refurbishing to remain current. Furthermore, the design and use of multimedia communication environments is central to both our teaching and research but we have reached the limits of adaptability and now require space in which to develop and deploy technologies such as Access Grid<sup>11</sup> that we are expected to have by our research partners such as NRC's IIT and others. We are exploring partnerships with CS, FIS and others who already make use of our facilities and digital assets. Partnerships have the potential to leverage infrastructure each of us owns to provide an enhanced service to both at minimal additional cost. As innovators of collaborative multimedia environments, we recently discovered a lightweight solution to delivering linked video and webcasting. We are now discussing this with the Faculty of Arts & Science. If successful, this will improve access to interactive video for the larger U of T community with little or no additional cost, and serve our mandate of bringing research into action.

### 3.5 Governance and Culture

KMDI's institutional location, *outside* of any single department, faculty or campus is a significant factor in our ability to work across disciplines. This relative autonomy is critical to our ability to innovate.

The Director holds a 50% appointment and reports to the Dean of SGS. There are currently no other faculty appointments in the Institute. We have been fortunate to have a Visiting Professor at minimal cost for each of the last two years, and have recently begun a Senior Fellows program, but our teaching program is stressed and the cost of constantly 'running on good-will' is high. An Executive Committee advises the Director. A 12 member Steering Committee meets monthly and members are encouraged to actively participate in shaping the Institute. In 2003-2004 a student member was added to this Committee. An Advisory Committee with members from the local business and professional community was disbanded in 2001 as we were uncertain how to use it effectively. This committee will be re-activated in 2004-2005 with a focus on building partnerships with leading enterprises in the private, public (e.g., the City) and civil society sectors.

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<sup>11</sup> An ensemble of resources used to support collaboration. This research infrastructure is now in use at over 150 institutions worldwide, including York U and Ryerson in Toronto. We are in danger of falling seriously behind in our ability to participate with colleagues, locally and internationally conducting research on collaboration and collaboration technologies.

*Student Experience:* Students are encouraged to be active members of KMDI's community, as they are the future of the field. Our goal is to foster a relationship with students that extends beyond the classroom. Many of our students as accomplished professionals with established careers are a unique resource. The students are currently exploring the formation of a student association, and they are actively engaged in promoting the Institute and the field. There is potential for a student column in the monthly newsletter, and student are increasingly taking a role in KMDI events, for example, on the planning committees for international conferences we sponsor or produce, and introducing speakers at local seminars and talks. KMDI's reach as a virtual institute exposes students to a variety of collaboration media and technologies. We will provide a student server next fall – a virtual space to explore the potential of the medium to foster collaboration and community development, and to provide a sandbox for their designs. While we advocate for the development of environments that foster a 'virtual' togetherness, we do not see this as a substitute for the wide variety of face-to-face interactions that stimulate creative engagements and spark learning.

*Membership in a virtual community:* Coordination and building community is an ongoing activity accomplished through shared teaching, research, governance and facilitated by a significant program of events, seminars. These both bring people together and provide the opportunity to experience first hand the collaboration technologies we design, build and use. Many events are webcast, archived, and made available over the internet. This has proved very popular, not only with our members, but internationally. With no advertising the 20 lectures currently available on the KMDI public site have been accessed in the past two years over 12,000 times!

#### **4.0 New Initiatives**

Our goals for the 2004-10 Stepping Up planning process are ambitious. In each case the funding model we assume is noted.

*1. Deepening and extending the reach of our research program:* As a relatively young institute our priority is to build our research community, and to nurture research in our areas of specialization where we hold two multi-year grants. In addition to research proposals generated in house, we are increasingly being asked by external partners to participate in a variety of research projects. Recent examples include: East York eHealth and eLearning TeleHomeCare Project (CANARIE), and NSERC's CRYSTAL Program (with OISE/UT, UTM, BMC, IBBME, Faculties of Engineering and Medicine). There is some potential for overhead revenues here.

*2 Putting our colloquium, lecture, and outreach program on a firm financial footing:* Encouraged by the recent acclaim for our 3-day event, *Open Source and Free Software: Concepts, Controversies, and Solutions*, the endowment of such an event is a key fundraising priority, and we will work closely with the SGS Advancement team.

*3. Expanding the collaborative graduate program:* Since its start-up two years ago, the program has already grown beyond the initial signatory units through the addition of the Institute of Medical Science (IMS). We recently began discussions with the Department of Public Health Sciences. However, given longstanding student interest and the potential to capitalize on shared curricular interests, our current priority is on bringing OISE/UT into the collaborative program. The addition of 3 academic units to the program in the next 6 years is a realistic target.

*4. Shared appointments:* Currently, our teaching needs are met on an ad hoc basis by adjunct appointments, sessionals, regular faculty buy-outs and departmental 'donations'. The program

has been extremely effective in leveraging its limited resources. In 2003/04 we managed to expand to six half courses to accommodate student demand. However, dependence on sessionals, adjunct faculty, etc. is not a satisfactory long-term solution for a world-class program. We propose to work over the next six years together with the university and our collaborating units to acquire 4 appointments shared with other units:

- one in Human-Computer Interaction shared with CS
  - one in social informatics or information design shared with FIS
  - two in media design, potentially shared with MIE, AL&D or UTM (CCIT) and UTSC.
- This will require negotiation with the participating units and support from the university.

*5. Semi-autonomous PhD program:* While KMDI has been successful in attracting strong prospective PhD candidates to consider studying at U of T, it has repeatedly faced difficulties in getting them admitted into a collaborating unit. Despite strong academic performance, interdisciplinary candidates are often incompatible with a given unit's recruiting priorities and program requirements. Currently KMDI is nearly powerless to influence these admitting decisions, resulting in lost opportunities, wasted recruiting efforts and faculty frustration. To remedy this situation, KMDI is seeking funds to partially meet the University's graduate student financing commitment (i.e. \$12,000 + tuition) for a small number (2 in 2004/05) of prospective KMDI PhD applicants, and to play a stronger and more formal role in the collaborating units admitting process. Simultaneously, KMDI is considering the merits of a stand-alone PhD program that would enable it also to admit and graduate its own doctoral students in Human-centred Design, a growing field in which we have been leaders and are now at risk of falling behind<sup>12</sup>. We will begin this year to formally assess the merit of this approach.

*6. Tri-campus relationships:* We anticipate increasing interaction with colleagues at UTM and UTSC. KMDI has been encouraged to consider undergraduate teaching. Partnering with existing programs is the most efficient and effective way in which we can contribute to undergraduate education. CCIT and the Institute of Communication and Culture, in particular, are natural partners for KMDI as our interests are complementary. For example, KMDI members from Biomedical Communications are moving to ICC. Institutionally, the Vice-Principal, Academic, at UTM has given a status-only appointment in ICC to KMDI's Director. The Director of CCIT and the Coordinator of the new UTSC-Centennial New Media Program have become members of KMDI as well as new faculty at UTM. The Coordinator of the Digital Enterprise Management Specialist Program in CCIT has long been a member of KMDI and we are currently exploring opportunities for both undergraduate teaching and research with Management at UTM. They are particularly interested in KMDI's expertise in the human-centred design of collaboration technologies, work practice and evaluation. Finally, KMDI graduate students have already proved to be a resource pool for TA's and even instructors for CCIT courses.

*6.1. Undergraduate teaching:* There is a general need for methods courses, qualitative and quantitative, at both the undergraduate and graduate level. This fall UTM Sociology, with assistance from KMDI and CCIT, is offering a course on web polling and web surveys, to be run in the department's Hitachi Lab for Survey Research. At present this requires no additional resources.

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<sup>12</sup> There is currently no Canadian Ph.D. program that can be compared to the MIT doctoral program in Media Arts and Sciences, the Carnegie-Mellon University program in Human-Computer Interaction, and the newly formed Georgia Tech program in Human-Centered Computing.

6.2 A more ambitious proposal involves CCIT and UTSC's New Media Program. The proposal is to design an undergraduate course that will be offered on all three campuses. In this model no campus is privileged, and undergraduates will experience the use of novel knowledge media first hand. Taking a blended approach, we will explore the use of collaboration technologies and new media over distance both for course delivery and support materials. We will engage both graduate and undergraduate students from KMDI, CCIT, and the New Media Program at UTSC as well as KMDI members and students from OISE/UT, FIS, and RCAT. The course will be designed both to support research and to be evaluated as an exemplar for the delivery of other courses. We will submit a proposal to the Academic Initiatives Fund.

## 7. *Institutional Innovation – Experimenting with New Organisational Forms*

7.1 *Network of Networks*: KMDI is the U of T's first Virtual Institute and is at the forefront of exploring new organisational forms to accommodate interdisciplinarity in traditional institutional settings. This reflects both practice and intellectual interest. KMDI has longstanding, and independent relationships with FIS, the U of T Libraries, including RCAT, ATRC, CS, OISE/UT, and the faculties of Engineering, Medicine and AL&D. More recently, as noted above our ties with UTM, in particular ICC and CCIT have strengthened. One aspect that links us is a shared interest in fundamental ways in which the creation, and dissemination of information is being transformed through deployment of ICTs, and the impact that this is having, or might have, on the information practices of the university community – students, faculty and administrators. This topic comprises only *a part* of the activities of any of the academic units above, but each has a perspective that complements the others in interesting ways. It seems reasonable to propose that these individual departments and faculties coordinate around specific projects in a way that retains each unit's identity and independence, but leverages the research in ways that catalyses and critiques the changing information practices across the university. As a founding member of Know –THIS (U of T Consortium on Knowledge Technologies for Health Innovation and Society)<sup>13</sup> KMDI has firsthand experience in creating this type of collaborative partnership. One of the goals of the current consortium is to create a physical place where researchers and members of the university community could come together. This would involve significant funds and the project would have to be designated by University Advancement Office as a fundraising priority.

7.2 *KMDI's ePresence Open Source Consortium*: With legal support from the Office of Research Services, we are working toward an open source release of ePresence (our interactive webcasting and archiving application). A Consortium, established in 2003 has enabled us to partially support the technical development, as well as contributing overhead to the university. The Adaptive Technology Research Centre, one of our partners, is a recognised leader in open source and universal design and represents the U of T on international standards bodies for the internet and WWW. KMDI will build on this expertise in guiding ePresence toward an open source release, and put us in the company of universities such as MIT who are leaders in this new model of collective peer-to-peer-production.

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<sup>13</sup> Members of KNOW-This include the Collaborative Program in Health Care, Technology & Place; the Centre for Global eHealth Innovation; Bell University Laboratories; Bell University Health Communication Laboratory; The Wilson Centre for Research in Education; and the Knowledge Translation Program.

## **5.0 Assessment and success**

Measuring success is obviously vital, but there are currently no benchmarks or best practices for assessing the success of interdisciplinary units. Appropriate benchmarks and metrics for evaluation of an interdisciplinary institute are likely to be significantly different from those used for traditional disciplinary units. For example, in a virtual networked institute such as KMDI, very few of the usual metrics apply, as we have no faculty of our own. The individual strengths of our members is important, but a set of measures that merely repeats and aggregates the academic quality indicators used by our members in their home units would not adequately represent the value of the institute. Comparisons with other institutes are also difficult, as our closest comparatives in the US and Europe all have substantial budgets, and their programs vary in significant ways.

As the university makes an increasing commitment to interdisciplinary research and teaching, the question of benchmarking will become crucial. Many of the existing metrics encourage faculty to concentrate their efforts in disciplinary centres with the result that interdisciplinary work is perceived as 'risky'. Over the next few years, we hope to engage in dialogue with university administration and with other interdisciplinary units, to understand what appropriate metrics for interdisciplinary collaborations might look like. We will offer KMDI's insight and experiences as part of this dialogue.

We take benchmarks seriously, but we believe that measures must tell us something about the strength of inter-disciplinary collaborations and the role that KMDI plays in nurturing them; our ability to provide a coherent intellectual framework for cross-disciplinary work; and our ability to create and lead a broader intellectual community. We have started to identify innovative measures that address some of these issues. Examples include the extent to which KMDI members sit on thesis committees (and tenure and promotion committees!) in departments other than their own; the number of grants and refereed publications per year co-authored by KMDI members from two or more different academic units, and cross-disciplinary citations of the work of KMDI members – i.e., citations in papers that are published in a different discipline from the KMDI work they cite. However, much work remains to be done on establishing the validity and utility of such measures.

## **6.0 Summary**

KMDI has consistently demonstrated its ability to help support itself by generating additional income from overhead, and funding for infrastructure through relationships with industry and research partners. Small gifts and sponsorships support the extensive program of events, and some income is generated through providing services based on our digital assets, and memberships in our consortium also returns overhead to the university. Our most pressing needs from the university are for an increase in our administrative staff complement and support for making shared appointments with interested departments and faculties and student funding a reality. The student experience could be most improved by having physical space, a place to meet and work together, a place that complements the virtual space we will soon provide them on a server.

We have set ambitious goals for 2004-2010. Our new initiatives are, however, grounded in the reality of the current fiscal climate. We will leverage existing resources through partnerships, and generate new funds through research, fundraising and strategic alliances with a variety of external partners. KMDI is indeed Stepping Up.