

# Convergence in ICT for effective knowledge transfer

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The Web and Media Technologies Division makes use of the evolution of the basic technologies in modern telecommunications and data networks and global technological trends as driving forces for effective health information communication and the transfer of knowledge.

The convergence between computing and communications forms information and communication technologies (ICTs). Not too long ago, one referred to Information Technology (IT). Now, with the infiltration of the Internet in our daily lives, the transmitting of information via the digital highway, one can no longer merely refer to IT, but also to communications.

Since the technical swing towards digital technologies, all electronic applications could be seen as different products of one unified technology, that being Information and Communication Technology. One early example of ICT convergence is the merging of the photocopy machine and the telephone, leading to the creation of the fax. But the most spectacular achievement in this area is convergence of computer and telephone that resulted in the upsurge of the Internet.

ICT now includes the convergence of Voice and Data Services in public and private networks, Computer/Telephony Integration, Fixed/Mobile Convergence and Multimedia Communications, where in a communication session, voice, video, graphics and sound may be used to convey information. As a result, evolution and convergence in ICT have led to the creation of Next Generation Networks (NGN). Triple Play, which is often referred to as "Quadruple Play" in order to stress the environment of mobility, implies that all data, voice and video services will eventually converge in an Internet Protocol (IP)-based Next Generation Network.

The reality for South Africa is that we are on the "wrong" side of the digital divide and today multimedia over IP would still come at an exorbitant cost. Houlin Zhao, Director Telecommunication Standardization Bureau, ITU went so far as to state that *"The telecom industry's focus on technologies and applications is failing to bridge the digital divide. Standardisation of technologies can help to bridge the digital divide by reducing infrastructure costs to ensure that equitable access to ICT remains possible."*<sup>1</sup>

In 1996, Don Tapscott wrote in his book entitled, "The Digital Economy: Promise and Peril in the Age of Networked Intelligence", that "a new medium of human communications is emerging, one that may prove to surpass all previous revolutions – the printing press, the telephone, the television, the computer, the radio – in its impact on our economic and social life." Tapscott maintains that the 'multimedia industry' is developing as a result of the convergence of three more traditional sectors: communications (telephony, cable, satellite, wireless, radio), computing (computers, software, services), and content (publishing, entertainment, information providers).<sup>2</sup>

The Web and Media Technologies Division (WMTD) applies this convergence of communications, computing and content as core in its communication and knowledge transfer approach. Through the process of linking radio communication, which is the most accessible form of media to date, with online technologies in an era of expanding connectivity and Internet access,

and content repackaging, the WMTD is looking at refining various combinations of ICTs as a holistic tool- and skill-set for the communication and transfer of knowledge of health science information. Online technologies include Web sites and portals, discussion forums, online surveys, listserves, Web casts and e-Newsletters. Content repackaging includes audio visual posters as well as bulk reproduction and printing of information packages on CDs.

Public health communication is inherently pragmatic. It embraces theories, organising frameworks, and implementation tactics from many different professional and academic disciplines. Four of the more important aspects of public health communication are: media campaigns, social marketing, risk communication, and media advocacy.<sup>3</sup> The WMTD collates these various disciplines into four underlying principles of effective communication.

## Principles for effective communications

### Know your audience

The first and most important step in communication planning is to gain as much insight as possible into the target audience. An understanding of, and consideration for, culture, language, ethnicity and ethnology are elementary when communicating the need for behavioural and social change as a method of prevention and intervention of communicable and non-communicable diseases.<sup>4</sup> This is done primarily by conducting original research (e.g., focus groups, surveys), assessing the results of previous communication efforts, and drawing from theories of communication and behaviour change. Methods of stimulating interaction and involvement are often necessary to get all involved to participate in the knowledge transfer process.

### Focus on the right objective

The strategies and tactics of a communication intervention will differ depending on the stated objective (e.g., informed decision-making, persuasion, policy change advocacy). A clear statement of objectives focuses and enhances all other elements of the communication planning process. These objectives remain vivid when selecting the bouquet of converging ICTs.

### Determine what information is of greatest value

For a variety of reasons, public health communication campaigns will always be limited in the amount of information they can successfully convey. Therefore, a critical step in communication planning is to determine what information has the greatest value in helping to achieve the stated objective of the campaign. The ideal (albeit rare) scenario is when a single powerful idea is sufficient to motivate and enable members of the target audience to embrace the campaign's objective.

### Convey simple, clear messages, many times, through many reliable sources

After the information with the greatest value has been identified, communication planners must determine how to convey that information simply and clearly, often, and by many trusted sources. Message repetition is an important element of program success. Audiences tend to process information incrementally over time. When the message is stated simply and clearly, when it is repeated often enough, and when it is stated by many trusted sources, audience members are more likely to learn and embrace the message.<sup>5</sup>

Knowledge transfer is about exchanging good ideas, research results, experiences and skills. The exchange of knowledge is often done between expert individuals, universities, other research organisations, business, government, the public sector, and the wider community. The desired effects are to enable innovative new products, encourage career development in the sector, improve service, and act as an impetus for the development and implementation of policies. Knowledge transfer is key when wanting to translate excellent health research into health promotion, products and policy influence.

## ICT convergence in practice

The National Science and Technology Forum (NSTF) acknowledged that it was not completely fulfilling one of its primary objectives, which is to ensure that the excellent achievements are recognised by the general public and that the awards be used to motivate existing players and promote science as a worthwhile career to all young people. The WMTD's approach to ICT convergence was employed to use NSTF Award winners as ambassadors of the Science, Engineering and Technology (SET) sector to young researchers.

ICTs that are available at the selected tertiary institutions were considered. Students have easy access to the Internet and well-established campus radio stations. These campus radio stations broadcast on a community radio station licence to the student population and the surrounding communities. Community radio stations in South Africa report to the Department of Communication (DoC).

- In this project, NSTF Award winners were linked with tertiary institutions offering academic courses in that particular field of science, engineering and technology. The radio talk shows were conducted on a weekly basis and academic members of staff and students were encouraged to participate in the radio talk shows.
- A dedicated NSTF Awards Web site <sup>6</sup> was developed where the upcoming radio talk shows were advertised and the site was regularly updated with the most current news on the NSTF Awards process.
- To further market the entire process, a NSTF Awards e-Newsletter was distributed on a weekly basis. In conjunction with the radio talk shows, it was used to encourage staff and students to participate in the radio talk shows.
- The NSTF Awards Discussion Forum allowed for the exchanging of ideas that was initiated at the radio talk shows to be taken further, also allowing aspiring students to speak directly to leaders in their fields of interest.
- A Web cast of all the radio interviews with the NSTF Award winners was streamed the day before the NSTF Gala event of the NSTF Awards Web site to enable a wider audience. The Web cast was regularly advertised in the e-Newsletter and on the Web site.

Essential to effective communication and knowledge transfer strategies is the evaluation and monitoring to ensure continuous progress and assess efficacy. This was done by surveys conducted with the NSTF Award winners, presenters of the campus radio talk shows and through an online evaluation form on the NSTF Awards Web site. More suggestions were made to include an additional ICT in the form of information kiosks at the various campuses that would provide information in print format and further market the knowledge transfer process.

## Lessons learnt

While traditional and modern communication technologies were converged to effectively transfer knowledge, some of these ICTs were specifically implemented with a push and pull approach by disseminating information and relying on and attracting the response and feedback of the target

audience. The purpose was to capture tacit knowledge – the expertise shared by outstanding scientists and the impressions and questions of the target audience. It assisted in determining the efficacy of the convergence of these ICTs in support of the NSTF's aims.

The challenge was to cross the barrier that people in general have to participate in public debate. The most important lesson learnt by the WMTD was to invent ways to break this barrier down. The approach was:

- To request campus radio station presenters to invite listeners at the end of the programme to submit their questions in the NSTF Awards Discussion Forum;
- To request NSTF Award winners to post their personal comments about the NSTF Awards to the discussion forum;
- It was found that certain campus radio stations had comments posted to them via short messaging system (sms). The presenter was encouraged to forward these comments to the discussion forum and reply to the sms directing them to the discussion forum.

In order to more effectively wade into this novel combination of communication technologies, the suggestion was made to the NSTF to incorporate an additional ICT. That is the use of information kiosks at the respective campuses. Previously, attempts were made to reach the student population through academic staff members and 'live-read' advertisements from the campus radio stations. With the use of information kiosks, students have a visible physical space where they can gain access to the Web site, post their comments to the discussion forum, and walk away with print media.

The added advantage of the convergence of the various ICTs is the branding opportunity that it presents to the NSTF Awards sponsors. These include radio advertisements, online branding, and corporate identity branding at the information kiosk. In this way, the costs for the communication strategy can be reduced by selling the branding opportunities.

## Conclusion

Knowledge transfer has been recognised as an essential inclusion in national science and technology research priorities. Recommendations from the Strategic Industry Leadership of the National Economic Development & Labour Council, is that knowledge transfer be promoted through the establishment of networking between existing centres of excellence, the collaborative programmes across industry, and academia, and thereby encourage more research and development spending by industry. <sup>7</sup>

The Bangkok Charter for Health Promotion in a globalised world highlights that progress towards a healthier world requires strong political action, broad participation and sustained advocacy. "Health promotion has an established repertoire of proven effective strategies which need to be fully utilised. To make further advances all sectors and settings must act to build capacity for policy development, leadership, health promotion practice, knowledge transfer and research, and health literacy."

South Africa has a strong science base, and if we are to compete in the global marketplace and truly bring knowledge to a point of need, we should utilise knowledge transfer and collaboration to effectively get our research into practice.

At its most effective, knowledge transfer has the power to influence policy and to radically improve service delivery and efficacy. Our research will make so much more impact on policy or practice if it is communicated to the right people in the right way at the right time. This is where knowledge transfer comes in.

## References

1. Houlin Zhao. ICT Standardisation – Bridging the Digital Divide. <http://www.connect-world.com/Articles/ICTStandardisation.htm>
2. Tapscott, D. (1996). *The digital economy: Promise and Peril in the age of Networked Intelligence*. New York, NY: Mc Graw-Hill
3. Maibach, E., and Hotgrave, D. (1995). "Advances in Public Health Communication." Annual Review of Public Health 16:219-238
4. Guttman, N. (2000). *Public Health Communication Interventions: Values and Ethical Dilemmas*. Thousand Oaks, CA: Sage.
5. Maibach, E., and Parrott, R.L., eds. (1995). *Designing Health Messages: Approaches from Communication Theory and Public Health Practice*. Thousand Oaks, CA: Sage.
6. NSTF Awards Web site at [www.nstfawards.org.za](http://www.nstfawards.org.za)
7. Chemicals Sector Summit Preparation (April 2005), Prepared for the Fund for Research into Industrial Development, Growth and Equity. Strategic Industry Leadership. NEDLAC

## Human Resources

### The First European Academic Workshop on Electronic HRM

25 to 26 October 2006,  
Enschede, Netherlands  
Website: <http://www.e-hrmresearch.org>  
Contact name: Tanya Bondarouk  
E-mail: [t.bondarouk@utwente.nl](mailto:t.bondarouk@utwente.nl)

This is the first Academic Workshop that invites scientists from both Information Technology and HRM fields to discuss research into e-HRM! We believe that such a combination will help to understand the phenomenon of electronic Human Resource Management.

### Juta's Annual Labour Law Seminar – Sandton

11 September 2006,  
Sandton, Gauteng, South Africa  
Website: <http://www.jutalaw.co.za>  
Contact name: Paula Whitaker  
Tel: 021 763 3640, Fax: 021 797 0121  
E-mail: [seminars@juta.co.za](mailto:seminars@juta.co.za)

Presented by prominent practitioners of labour law, this well established, practical seminar includes an overview of important case law and statutory developments affecting the employment relationship & deals with burning current issues.

## Knowledge Management

### 3rd International Conference: "An Enterprise Odyssey: Integration and Disintegration"

15 to 17 June 2006,  
Zagreb, Croatia (Hrvatska)  
Website: <http://www.odyssey.efzg.hr>  
Contact name: Nevenka Ćavlek  
E-mail: [odyssey@efzg.hr](mailto:odyssey@efzg.hr)

## Information Technology

### Third Health Information Technology (HIT) Summit

25 to 27 September 2006,  
Washington, DC, United States  
Website: <http://www.HITsummit.com>  
Contact name: Paul Tunnecliff  
E-mail: [registration@hconferences.com](mailto:registration@hconferences.com)

## HIV/AIDS

### 14th International Symposium on HIV and Emerging Infectious Diseases (ISHEID)

21 June 2006, Toulon, France  
Website: <http://www.focusing-first-on-people.com/index.html>  
Contact name: Docteur Alain Lafeuillade,  
Tel: +33 (4) 94 22 77 41  
Fax: +33 (4) 94 92 67 47  
Logistics  
Contacts: Patricia LHOTE  
Tel: +33 (0)1 41 92 01 20  
Fax: +33 (0)1 46 41 05 21  
E-mail: [toulon2006@club-internet.fr](mailto:toulon2006@club-internet.fr)  
[hivcongress@overcome.fr](mailto:hivcongress@overcome.fr)

### Sexual Health 2006 Conference

9 to 11 October 2006,  
Melbourne, Victoria, Australia  
Website: <http://www.sexualhealth2006.com.au/>  
Contact name: Nicole Robertson  
E-mail: [conferenceinfo@sexualhealth2006.com.au](mailto:conferenceinfo@sexualhealth2006.com.au)

The 2006 Australasian Sexual Health Conference will focus on the following themes: Human Papillomavirus / Bacterial Vaginosis / Anti Retroviral Treatment / Herpes and HIV Interactions / Chlamydia Screening.

## Health

### 13th World Conference on Tobacco OR Health

12 to 15 July 2006, Washington DC  
Website: <http://www.2006conferences.org/t-index.php>  
Contact name: Conference Secretariat  
American Cancer Society  
1599 Clifton Road NE  
Atlanta, Georgia 30329-4251  
Attn Lisa Astorga, Talley Management  
856.423.3135  
Fax: +404-728-0133  
E-mail: [secretariat2006@cancer.org](mailto:secretariat2006@cancer.org) / [ICTCC@laser-registration.com](mailto:ICTCC@laser-registration.com)

### The International Union Against Cancer Conference

8 to 12 July 2006, Washington DC  
Website: <http://www.2006conferences.org/t-index.php>  
Contact name: Conference Secretariat  
American Cancer Society  
1599 Clifton Road NE  
Atlanta, Georgia 30329-4251  
Attn Lisa Astorga, Talley Management  
856.423.3135  
Fax: +404-728-0133  
E-mail: [secretariat2006@cancer.org](mailto:secretariat2006@cancer.org) / [ICTCC@laser-registration.com](mailto:ICTCC@laser-registration.com)

### Influenza Vaccines for the World: IVW 2006

18 October 2006, Vienna, Austria  
Website: [http://www.meetingsmanagement.com/ivw\\_2006/](http://www.meetingsmanagement.com/ivw_2006/)  
Contact name: John Herriot, IVW 2006 Secretariat, MEETINGS MANAGEMENT, The Barn, Rake Headow, Station Lane, Milford, Surrey, GU8 5AD, United Kingdom  
Tel: +44 (0)1483 427770  
Fax: +44 (0)1483 428516  
E-mail: [jherriot@meetingsmgmt.u-net.com](mailto:jherriot@meetingsmgmt.u-net.com)

### 10th International Conference on Alzheimer's Disease and Related Disorder

15 to 20 July 2006,  
Madrid, Spain  
Website: <http://www.alz.org/icad>  
Contact name: Conferences Service Team  
E-mail: [icad@alz.org](mailto:icad@alz.org)

This is the world's leading forum on dementia research. Presentations cover the entire spectrum of dementia research including etiology, pathology, treatment and prevention of the disease.

## Nutrition

### International Research Conference on Food, Nutrition and Cancer

13-14 July 2006,  
Omni Shoreham Hotel, Washington DC;  
703-683-6334  
Website: <http://www.aicr.org/conference>  
Contact name: AICR/WCRF International Conference Secretariat  
The Pearson Group  
904 Princess Ann Street, Suite 103  
Fredericksburg, VA 22401  
E-mail: [aicr@pearsonplanners.com](mailto:aicr@pearsonplanners.com)

### From Genetics to Community: What is Obesity? Sociocultural and Ethnogenetic Determinants of Obesity

9-10 September 2006, Auckland, New Zealand  
Website: <http://www.tcc.co.nz/assonz/index.html>  
Contact name: Elaine Rush  
E-mail: [assonz@tcc.co.nz](mailto:assonz@tcc.co.nz)

This conference will focus on sociocultural and ethnogenetic determinants of obesity; prevalence and risk factors for obesity; and the impact this has on intervention strategies in the community.

### Canadian Micronutrient Conference

29 to 30 September 2006,  
Mississauga, Ontario, Canada  
Website:  
<http://www.canadianmicronutrientconference.com>  
Contact name: Bob Bonisteel  
E-mail: [bbonisteel@rogers.com](mailto:bbonisteel@rogers.com)

## Business and Finance

### Global Leaders Africa - Enabling African Leadership

20 to 22 June 2006,  
Johannesburg, Gauteng, South Africa  
Website: <http://www.globalleadersafrica.com>  
Contact name: Global Leaders Customer Service  
E-mail: [info@globalleadersafrica.com](mailto:info@globalleadersafrica.com)

Global leaders Africa 2006 is an entirely new leadership experience. A gathering of the world's most distinguished thought leaders, presenting live and in person to business executives, public sector figures and aspiring entrepreneurs.

### Annual Conference:

#### Ethics Society of South Africa

11 to 13 September 2006,  
Stellenbosch, Western Cape, South Africa  
Contact name: Hennie Lotter  
E-mail: [hpl@lw.rau.ac.za](mailto:hpl@lw.rau.ac.za)