

Welcome to the Wired World

by Ian Jukes & Ted McCain

Synopsis:

Ready or not, here comes the Communication Age. Never has time and distance meant less. Whether it's the Internet, OJ, Oklahoma, or the CNN War, we now live in different times - in a world of instantaneous global communications. The emerging electronic superhighways are a development on a par with invention of light, electricity, the telephone or printing press. They will have an impact on virtually every aspect of our lives and will change forever the way we live, work and learn.

This provocative presentation outlines the four major trends that are redefining our world, and gives you a jump start at understanding a new age which will most certainly reshape education as it has the rest of the world. By combining snapshots of the new technological realities with visions of tomorrow, participants will be able to better understand why the emergence of the communication age marks the start of really remarkable times for students, educators, families, businesses and the communities that they live and work in.

So whether you're just trying to understand what's really going on out there, or working to restructure your school or community, strap on your cerebral flak jacket and let Ian point the way.

Who is this guy and what is he going to do?

- explain the future - leave out some the details
- talk about the affront of change
- give a sense of what is - but more importantly, a hope of what might be
- in an hour - I can't educate you , I can only irritate you
- I promise to comfort the afflicted, but also to afflict the comfortable
- the reason - because I'm selfish! More concerned about our children and their future than us
- My goal - to help Kyler, Nils and all our children by helping you in developing a personal & professional vision for life in the 21st century....

So let's begin!!!

- it's a changing world but change is sometimes hard to fathom, because it is sometimes subtle/sneaky when it's in our face - like with our own children - they grow before our very eyes but it's hard to see and harder to accept until we are confronted with it - like Kyler and his clothes
- change in our society is even harder to accept as the scale & scope is hard to comprehend
- fundamentally different...

Whatever way we slice it, it's a different world

- things have fundamentally & irrevocably changed
- it's not just change today and status quo tomorrow
- it's constant, relentless change today and change tomorrow - change forever

We are at the dawn of a new age

- we are being engulfed by technological change
- my message to you today is that you better ride it or run risk of being swept away by it because surf's up!

So, what is this new technological reality?

- it's the infrastructure for virtually every company & industry in marketplace today
- it's now the world's largest economic sector driving the fundamental changes in business &

community - like it or not it's here - it's the new reality for 21st C.

The new reality

- ubiquitous, embedded & transparent technology
- technological compression of time & distance through instantaneous global communication allowing anytime, anywhere access to information and resources that has fundamentally led to the death of distance - there's never been a time when distance has meant less than it does today

Our amazing technological world

- whether we're talking about OJ, Oklahoma, Israel, the ValuJet disaster or the CNN War, we see history as it happens, and world events as miniseries because we are connected wherever we are at that moment
- this is all being driven by emergent technologies but you ain't seen nuthin yet because the biggest changes are yet to come

There are four major developments you just can't ignore

- global digital networks
- technological fusion
- new strategic alliances
- personal computers for everyone

#1 Global Digital Networks

Remember way back when.....

- the newspaper wasn't filled with Internet stories - surfing was something you did with a bathing suit - advertisements didn't have <http://spend.bucks> at the end - "the Web" was the TV networks - picking up mail was done by going to the mail box

What happened?

- phones & emergence of fax
- death of postal service, snail mail & even overnight letters
- explosion in data transmissions as a share of telephone traffic - in 1990 - 80% of telephone traffic was voice - in 1999 - 15% voice
- where is this leading? Right now, not very far because we don't really have electronic highways, we have electronic dirt roads
- the information highway is still under construction - right now it's mainly lots of talk - mostly hype - because using the highway is still clunky, slow, unreliable - bringing large amounts of information over it is like trying to suck peanut butter up a straw - it's filled with potholes, detours, roadkill - few have the access, vehicles, or understanding to use it
- but remember, you can't confuse the enormous promise with current pokey reality because overnight this is changing from geekhood to coolness - in the past year it has been inserted into public consciousness - it's now racing toward full-fledged status as commercial medium
- 1999 coming to a community near yours you'll see @Home - cable modems capable of up to 2 trillion bps down a single wire - that's like 200 CD-ROM's per second - speeds beyond our comprehension - but that's just part of it!

New communication

- cell telephones - 11 million purchased in US in last 12 months - global grids of geostationary satellites from Motorola & Bill Gates
- 500 number - anytime/anywhere connection
- bizarre patents for cellular earring, watch, glasses, ringeven a nose implant

Where are we going?

- digital, global, wireless
- WAN of telephones, television, cable, satellites, & personal computers
- connects everyone to everything forever altering the way we work, play, move about & view fellow

citizens

Moving from LANs to WANs

- wireless webs already happening
- UPSNET - 50,000 trucks
- one way wireless asymmetrical bandwidth data only now
- symmetrical bandwidth for data, voice, graphics, sound, motion video within 18 months
- we'll see it with couriers first - homes & schools next

A new communication paradigm

- conceptual dynamite - like the shift from steam to oil - trains to planes - mainframes to PCs
- we are just embarking on the new communications century
- new global digital networks combined with...

#2 Technological Fusion

Monomedia not multimedia

- we live in a new digital reality that allows us to capture, process, store & communicate all forms of knowledge - words, still photos, video, music & animation - in a single medium
- what does Rubbermaid make - the Rubbermaid home office

Where is this all heading?

Technological overdrive

- virtual vision glasses combined with Sony compressed video technology - DVDS CDs with a capacity of more than 4 GB per side allowing us to store up to 4 movies per side - that's now - who knows how much later

Virtual reality

- fly an airplane - design a house - design 777 - fly it before you make it - virtual medicine - stepping inside a calculus function - have the ability to touch it, feel it, do it
- not readily available but then there's virtual Sega - as sign of things to come

Voiceprint

- right now, 20% of all paid hours & 40% of all workers are for keyboarding - problem is that you can only type at a maximum speed of 120 wpm vs. speaking at up to 1000 wpm
- but on the immediate future is IBM voiceprint - voice to text instantly
- and shortly thereafter, there will be automated interpreting telephony - your voice in another language instantly - Hitachi wants this in the phone system world wide in next four years

Technological overdrive

- in 1996 - every 12 seconds -1 new technology -10 high tech services
- by 2000 - every 1 second -15 high tech products-100 high tech services

Why is this such a big deal?

- and this is just what we know now - tech extrapolation - wow! - because transformation of past 5 decades will be dwarfed by changes of next decade
- today's high tech just hints of a future world that we can't even begin to imagine because it's not just global digital networks & tech fusion.
- it's this combined with...

#3 New Strategic Alliances

Strange bedfellows

- SEGA, Nintendo, AT&T, TCI...
- anyone & everyone with product
- connections not immediately clear
- why?????
- no longer about hardware
- now about information
- blurring lines between cable, telephone & computer services
- new age of interactive services
- cybercash generation
- emerging black box technology

Black box services

- movies - TV programs - video games - home shopping - virtual shopping - bill paying - home banking - home cash machines - email - teleconferencing - personalized info - intercasting - virtual learning - libraries, museums, art galleries - all from one source
- this in part explains the current turf wars
- we have diverse corporations fighting to shape your digital future
- not just consumer electronics industry but also media industry, computer/phone/ cable operators anyone with a pipeline into your home - they want a piece of action and the pot of gold at the end of it

Piecing the puzzle.....What have we got so far?

- global digital networks- new high speed highway
- technological fusion - powerful vehicles for highway
- new strategic alliances - new interactive global destinations
- so what's the final piece?.....

#4 Computers for Everyone

Personal telecomputers

- to extend tech fusion to mass consumer market
- technology for many not few at calculator prices
- they will be smaller, cheaper, lighter, more portable & powerful
- by early 21st century we'll see them in our pocket, on our wrist or in the palm of hand
- these will be powerful personal intelligent communicator capable of sending & receiving all communications like Dick Tracy watch
- not for us - we can't handle it - they are the natural next step for Nintendo generation
- sold at KMart or Toys R Us

Death of distance

- geographically separated but electronically connected
- from workers to job...to bringing job to worker
- the work site becomes wherever you live
- telecommuting to job site using computerized PDA
- you become the office or classroom wherever you are at that time

This is a catalyst for major change

- absolute revolution in economic activity
- like 19 C transcontinental railway
- like 20th C - oil, automobile, highways
- lead to application of new mindsets
- new technologies, industries, jobs, economic horizons & great leaps in economic development.
- it is leading to a new digital world order
- you can accuse me of being the master of hyperbole & overstating things.. but what's happening here is on a on par with the invention of the light bulb, discovery of electricity, motor, phone, printing press
- each fundamentally changed nature of economic activity

Having a hard time accepting that this will change our lives?

- then consider TV, PCs, satellites, ATM's, cell telephones, faxes, personal pagers, Walkman, CD's & camcorders - what effect have they had? what effect will new ones have on us & our kids?
- and what about schools?...

What promise could this hold for classrooms of tomorrow?

21st century classrooms

- technology in the workplace today, will be in the schoolplace tomorrow
- schools without walls - the classroom will no longer be stationary place but rather a vehicle capable of transforming classroom

21st century classrooms

- visit hidden realms - explore inside microscopic cells - build virtual house, fly virtual plane, drive virtual car

New ways of doing things

- fact delivery to on-line research - teacher no longer content expert - textbook replaced as primary source- pursuit of topics anywhere, anytime with same access to world class info as research scientists worldwide
- remote access to information - students telecommute to school - instead of taking kids to the library bring the library to kids
- this will continue to blurry boundaries between school and home and allow a whoever, whenever, wherever education

Classrooms for tomorrow

- multimedia teleconferencing
- virtual field trips
- visits to virtual museums rain forests, volcanoes, art galleries and other geographically scattered sacred sites of learning
- not real experience - will never replace a real experience but will complement them
- not *physically* visit but psychically televisit them
- a virtual electronic recreation with shocking richness, realism & authenticity
- extend transparent boundary between real & virtual world

So what's stopping us?

- hard to imagine if you work in a school where the technology is older than the kids
- tools are here and cheap enough for schools to obtain but they will only used if we dream & believe boldly
- the starting point is a fundamental philosophical realignment
- change is about HEADWARE not HARDWARE!

It's time to get going! So, where do we begin?

Where will this lead us tomorrow?

- living life like quarterback - educators as futurists - anticipating future - seeing present as past of future - from contemplating here & now to envisioning that future before we talk about what to
- must understand that it's not technology but rather the social power of technology to fundamentally transform

Beyond technolust!!

- we must rethink & redefine notions of technology & classroom
- re-assess how technology can & will transform education
- develop new paradigms for classrooms of tomorrow
- as a starting point.....

Start by acknowledging

- we live in the old, kids live in the new - it's a matter of relevance - we don't relate to their present, let alone their future - we must focus on bringing about conceptual shift and getting beyond biases need to change mindset

So what needs to happen?

- we need to rethink - technology - classrooms - curriculum - schools - teachers - learning and particularly what it means to be educated in light of changing modern world

But change is hard & messy!!

- most of us have a real sense of overwhelm & hopelessness
- how do you make change? one at time
- conflict & discomfort guaranteed
- but when it's right...all will change

But why should we change?

- because the revolution just begun and already it's overwhelming us - outstripping capacity to cope - antiquating laws - transforming mores - reshuffling economy - reordering priorities - redefining workplace - putting Constitution to fire - shifting our concept of reality
- most critical assets no longer minerals, fiber, grain, wood, & appliances
- now it's technologically literate work force with skills needed to compete
- everything from neck down will be minimum wage
- countries which don't embrace technology are toast
- capital & jobs attracted to economies with state of the art infrastructures & innovative, affordable services - they will become uncompetitive
- they face the specter of massive structural unemployment - a workforce that is not just unemployed - but unemployable
- no nation can operate 21st century economy without viable 21st century electronic infrastructure
- countries lagging will tend to become backwaters of economic activity
- need educated population to drive this infrastructure as we did transportation system
- this is a national security issue

How can you begin?

- beyond overwhelm & yabbut
- path of least persistence
- can't let things happen - make things happen
- stop waiting for others we all need to get moving!!
- 25% of population - 100% of the future
- pensions & very future depend on doing it right

And it all starts with us

- rhetoric not language of change
- by self can't reform schools
- if we do what we've always done...
- personal challenge to each of you
- vision..... there is one thing worse than not being able to see - it's being able to see and having no vision - shift happens!!

For further information, contact:

Ian Jukes, Associate Director
Thornburg Center for Professional Development
Educational Technology Planners
RR 2 S-24 C-2, Peachland, BC V0H 1X0
(250) 767-2971 (Ian's office)
(250) 767-2945 (Ian's fax)
email: ijukes@edtechplanners.com
Web sites: [http:// www.tcpd.org](http://www.tcpd.org)
[http:// edtechplanners.com](http://edtechplanners.com)

Ted McCain, Associate Director
Thornburg Center for Professional Development
26855 - 108th Avenue, Maple Ridge, B.C. Canada V2W 1P4
(604) 462-8586
tmccain@netcom.ca
Web site: [http:// www.tcpd.org](http://www.tcpd.org)