


## The Fourth Decade of the IT "Revolution":


Kenneth C. Green • The Campus Computing Project



# THE FOURTH DECADE OF THE IT "REVOLUTION"

**Kenneth C. Green**  
THE CAMPUS COMPUTING PROJECT  
[campuscomputing.net](http://campuscomputing.net)

LEARNING IMPACT • 2010  
IMS Global Learning Consortium  
17 May 2010



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## Cross-Cultural Subtitles

- ◆ China: 小心你希望的东西  
(Be careful what you wish for)
- ◆ France: *plus ça change*  
(The more things change, the more they stay the same)
- ◆ Brazil: *só as moscas mudam!*  
(Only the flies change)



### We Have Been Here Before

#### THE MORE THINGS CHANGE

- ◆ Faster, better, smarter & far less expensive
- ◆ Networks / wireless
- ◆ Imaging
- ◆ LMS
- ◆ Web 2.0 / Cloud
- ◆ Social media

#### THE MORE THINGS STAY THE SAME

- ◆ IT costs/budgets
- ◆ Instructional Deployment
- ◆ Infrastructure
- ◆ Faculty Engagement
- ◆ User Support
- ◆ IT Planning & Policy



### Past, Present & Prospects

#### TWO KEY QUESTIONS

- ◆ Why don't faculty do more with IT and eLearning?
- ◆ Why don't colleges and universities make better use of IT resources?



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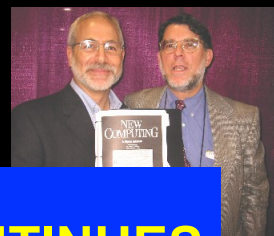
### What We Know

- ◆ IT touches everything!
- ◆ Despite great technology and impressive gains, our reach continues to exceed our grasp.
- ◆ The consumer experience now defines expectations about campus IT resources & services.
- ◆ Continuing pressure for higher ed to provide the much promised productivity bang for the IT bucks.
- ◆ *No more epiphany:* "In God we trust; all others bring data."



### The New Computing

Beginning in the 1980s, college professors and college students who had never used a computer and never thought of themselves as computer users embarked on a journey they could no longer delay.



**THE JOURNEY CONTINUES**

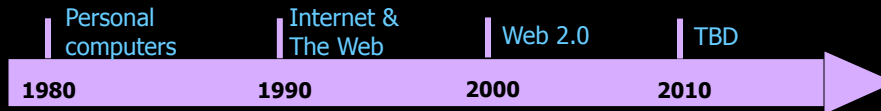
Steven W. Gilbert & Kenneth C. Green  
The New Computing in Higher Education,  
*Change*, 1985



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### Three Decades of the Computer "Revolution"



From Cute & Convenient to Compelling

From Compelling to Compulsory

Great Aspirations vs.  
Assessment and Accountability



### The Accidental Revolution

- ◆ Unanticipated
- ◆ Unplanned
- ◆ Unprepared



*The Accidental Revolution (1980)*  
Robert Gillespie  
University of Washington

***What's Changed?***  
*The Continuing  
Accidental Revolution*

### Most Significant IT Issues Involve Instruction & Infrastructure

- ◆ Planning and Priorities
- ◆ Programs
- ◆ Policy
- ◆ People
- ◆ *Impact on pedagogy, operations & outcomes*



### Four Key Issues for the Future of IT for Higher Ed

- ◆ Great Aspirations
- ◆ The Deming Dictum
- ◆ The Consumer Experience
- ◆ New Technologies



## #1

# GREAT ASPIRATIONS

## Great Aspirations

Both the processing and the uses of information are undergoing an unprecedented technological revolution. Not only are machines now able to deal with many kinds of information at high speed and in large quantities, but it is also possible to manipulate these quantities so as to benefit from them in new ways. This is perhaps nowhere truer than in the field of education. One can predict that in a few years, millions of schoolchildren will have access to what Philip of Macedon's son Alexander enjoyed as a royal prerogative: the services of a tutor as well-informed and as responsive as Aristotle.

Patrick Suppes  
*Scientific American*  
October, 1966



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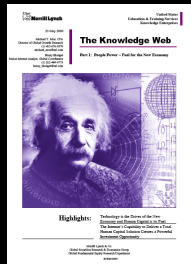
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### Greater Aspirations

Education is the killer app of the Internet



John Chambers  
Chairman & CEO  
Cisco Systems



Moe & Blodgett  
*The Knowledge Web*  
May 2000

The new economy moves at a pace never seen before. The new economy is a knowledge economy based on brainpower, ideas, and entrepreneurship. Technology is the driver of the new economy, and human capital is its fuel....in the next five years there will global virtual universities with potentially millions of students enrolled.



### déjà vu

For better or worse, television dominates much of American life and manners....Part of [the] lackluster record of the educational uses of television is of course due to the heretofore merciless economies of the medium. But profound pedagogic mistrust of the medium also remains a fact of life. The proof of the pudding lies in the fact that on many campuses, fancy television equipment...now lies idle and often unused.... **Academic indifference to this enormously powerful medium becomes doubly incomprehensible when one remembers that the present college generation is also the first television generation.**

George Bonham  
*Television: The Unfulfilled Promise*  
Change, 1972



### The Future of Universities?

universities won't survive... higher education is in deep crisis. Already we are beginning to deliver more lectures and off-campus via satellite or two-way video at a fraction of the cost [of traditional courses]. The college campus won't survive as a residential institution. Today's [college] buildings are hopeless unsuited and totally unneeded.



Peter Drucker  
Forbes Magazine, 1997



## #2

### THE DEMING DICTUM:

### Quality, Assessment & Outcomes

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### The Quest for Accountability

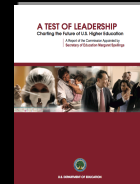
We are concerned about the widespread resistance to cost effectiveness thinking in higher education because it is so profoundly anti-intellectual. It rejects reason, and it puts a low value on the time of faculty trained to reason well...

We must guard against the widespread tendency to trivialize the problem of efficiency in higher education. It is not only a financial problem but an intellectual one. The questions about efficiency lead to a host of questions about teaching and learning, and the the ultimate questions about the nature and purpose of higher education. These are too important to the colleges and universities – and too intellectually challenging – to be dismissed as illegitimate.

President’s Task Force on Higher Education, 1971



### The Spellings Commission



- ◆ **ACCESS:** “too few Americans prepare for, participate in, and complete higher education”
- ◆ **AFFORDABILITY:** “costs have outpaced inflation for two decades....Our higher education financing system is increasing dysfunctional”
- ◆ **ACCOUNTABILITY:** “there is inadequate transparency and accountability for measuring institutional performance”



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### Bring Data!

“Back in Texas we like to say ‘In God we trust; all others bring data.’”

Margaret Spellings, Sec. of Education



W. Edwards Deming

- ◆ First efforts to “bring data” to the conversations about the impact of IT on instruction, outcomes, and operations.



### Quality in Online Education

**FOLHA DE S.PAULO**

São Paulo, segunda-feira, 10 de setembro de 2007 FOLHA DE S.PAULO **cotidiano**

[Próximo Texto](#) | [Índice](#)

**Aluno a distância vai melhor no Enade**

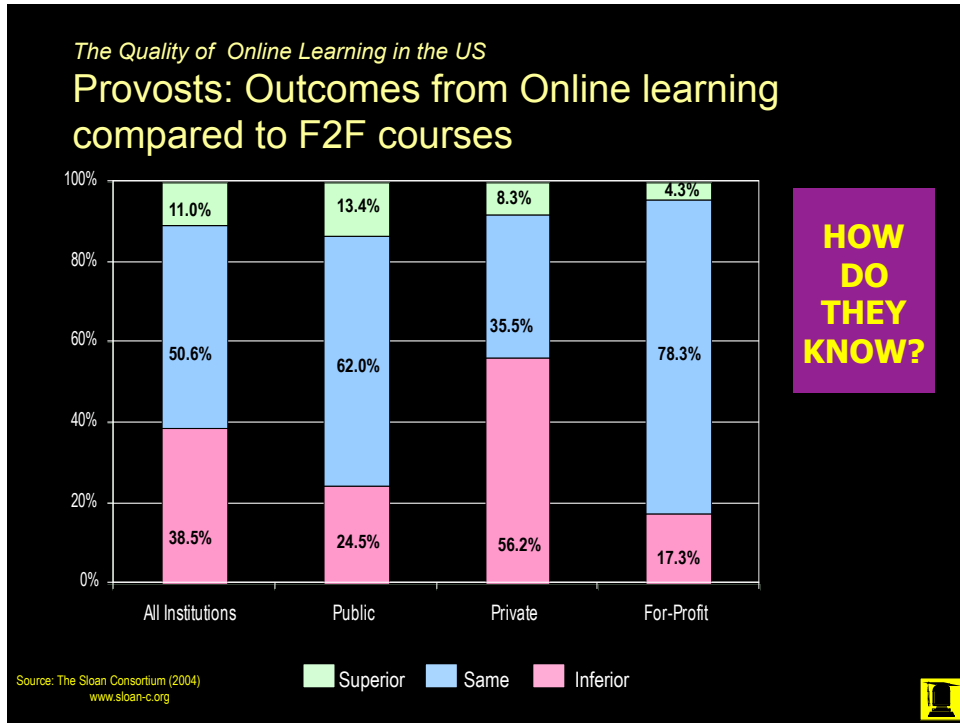
Em 7 de 13 áreas onde comparação é possível no ensino superior, alunos de curso a distância superam demais

[Resultados do ENAD 2007](#)

- ◆ WHY?
- ◆ Better students?
- ◆ Better faculty
- ◆ Better support?

Students in online courses outperform peers in on-campus courses in 7 of 13 subject areas





## The Productivity Conundrum

- ◆ Same product/service at less cost
- ◆ Better product/service at same cost
- ◆ Better product/service at less cost

### The LMS Conundrum

- ◆ Whole new category of software
- ◆ Annual cash paid to providers: \$340M
- ◆ Annual institutional support exp: < \$300M
- ◆ In-kind support: < \$1B?
- ◆ Annual exp: < \$1.7B?
- ◆ Impact on instruction?
- ◆ Impact on outcomes?

### The ERP Problem

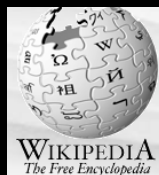


## #3

# THE CONSUMER EXPERIENCE

## Rising Expectations and Entitlements

### Icons of the NEW Internet Economy



## The Wireless Entitlement

Say Hello to  
George!



George Francis Holz  
Rochester Inst of Technology  
class of 2011

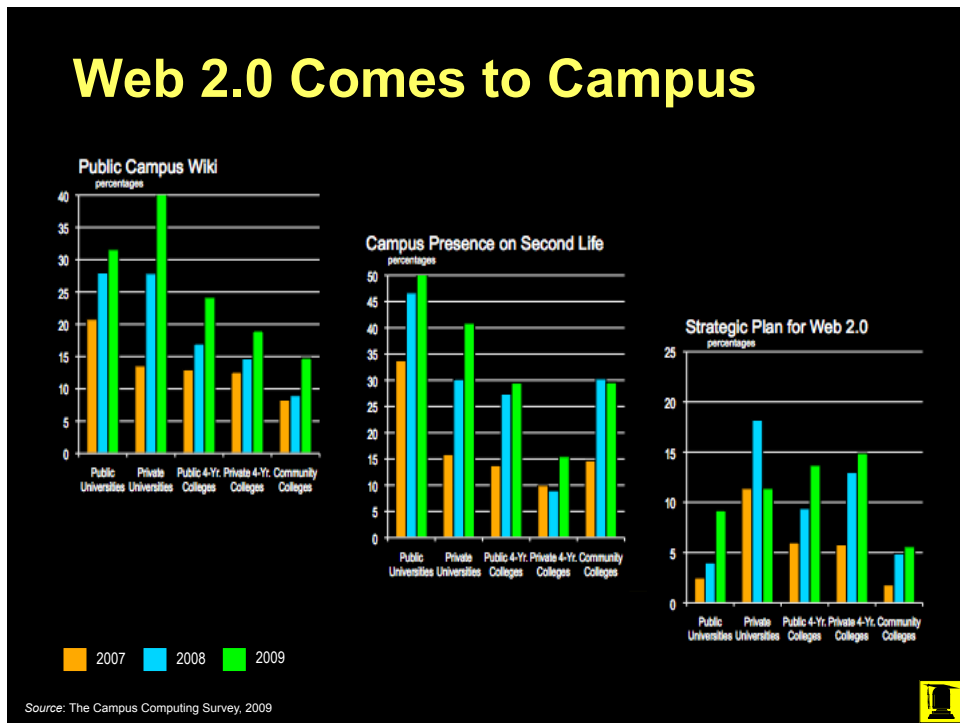
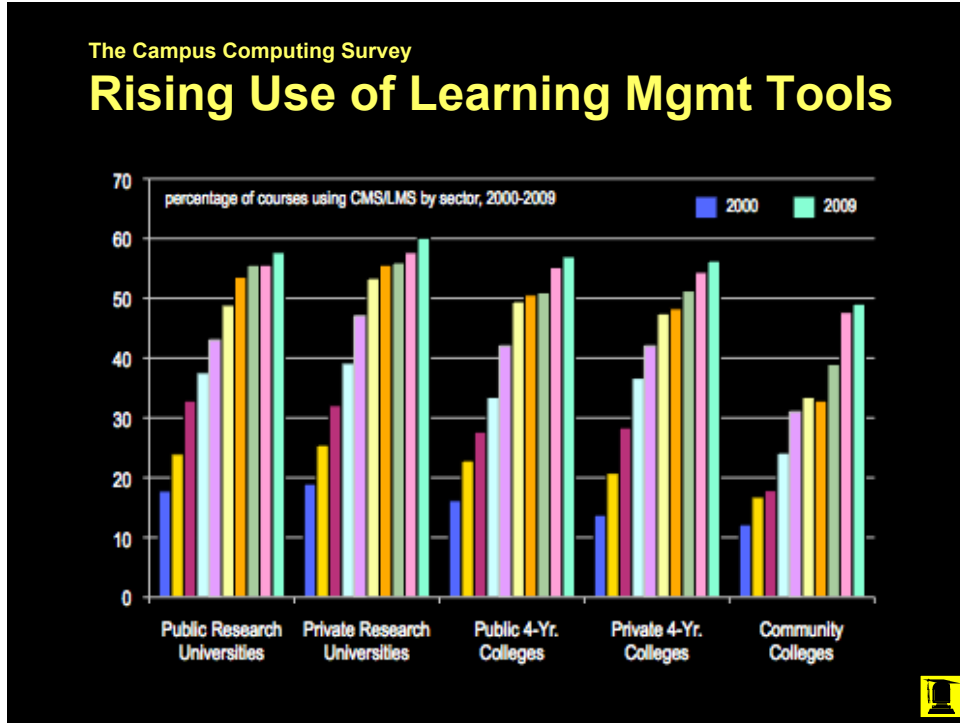
...and his  
cracked iPhone



#4:

**NEW TECHNOLOGIES**





## WHAT DO WE KNOW AND WHERE DO WE GO?

### Technology is Disruptive

- ◆ Technology is a metaphor for change



### Technology is Disruptive!

#### Issues & Impacts

- ◆ Organizational practice & process
- ◆ Individual behaviors and preferences

#### Response

- ◆ Denial
- ◆ Anger
- ◆ Bargaining
- ◆ Depression
- ◆ Acceptance

*On Death and Dying*  
Elizabeth Kübler-Ross



### Making the Classroom "Safe" for Faculty

- ◆ Technology is a metaphor for change
- ◆ The Potemkin Village effect
- ◆ Compelling evidence of impacts – and benefits

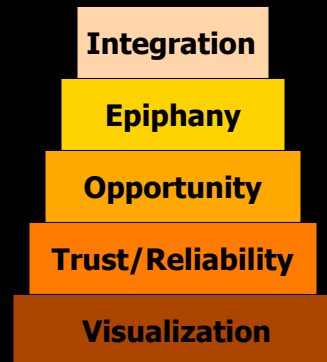


## Digitizing Maslow

Maslow:  
Hierarchy of Needs



Digitizing Maslow



Green, "Digitizing Maslow," 2005



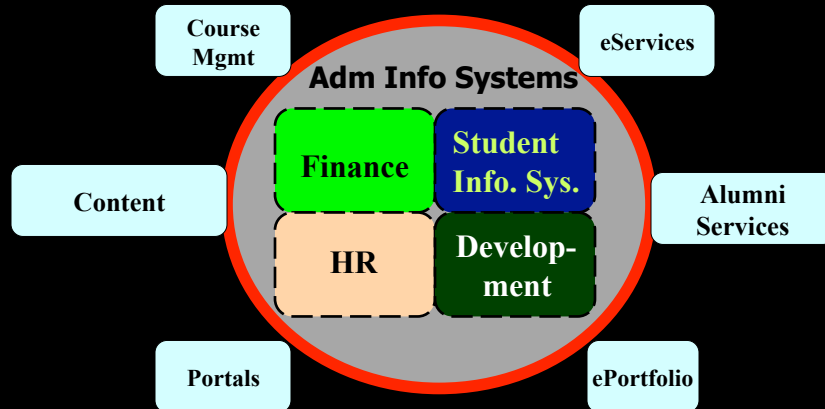
## Instructional Impacts & Outcomes

- ◆ IT moves to the center of the conversation about data, assessment, and outcomes
- ◆ *Key Tools:* Data warehousing/mining & ERP analytics
- ◆ *RIP:* The Institutional Research Office as we know it



### Bringing Data

## A New Model for Assessment & Outcomes



## ...and Now What Do We Do?

- ◆ Focus on people
- ◆ Attend to tech trends
- ◆ Support the faculty
- ◆ Invest in infrastructure
- ◆ Address impacts and outcomes

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