Frameworks for Planning and Implementation: Structures from a Decade of the Horizon Report

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The Horizon Report

The 2012 Horizon Report















Patterns

The 2012 Horizon Report



The 2011 Horizon Report



The 2010 Horizon Report



The 2009 Horizon Report





Social	Mobility	Visualization	Storytelling	Gaming
200,000 years	70,000 years	40,000 years	17,000 years	8,000 years

The Higher Education Context

Key Trends (2012 Horizon Report)

- People expect to be able to work, learn, and study whenever and wherever they want to.
- The technologies we use are increasingly cloud-based, and our notions of IT support are decentralized.
- The world of work is increasingly collaborative, driving changes in the way student projects are structured.
- The abundance of resources and relationships made easily accessible via the Internet is increasingly challenging us to revisit our roles as educators.
- Education paradigms are shifting to include online learning, hybrid learning and collaborative models.
- There is a new emphasis in the classroom on more challenge-based and active learning.

Significant Challenges (2012 Horizon Report)

- Economic pressures and new models of education are bringing unprecedented competition to the traditional models of higher education.
- Appropriate metrics of evaluation lag the emergence of new scholarly forms of authoring, publishing, and researching.
- Digital media literacy continues its rise in importance as a key skill in every discipline and profession.
- Institutional barriers present formidable challenges to moving forward in a constructive way with emerging technologies.
- New modes of scholarship are presenting significant challenges for libraries and university collections, how scholarship is documented, and the business models to support these activities.

Five Disruptive Forces (Jeff Selingo, Nov. 2012)

- Completion
 - Low completion rates
 - More skilled jobs
 - Flat attainment
- Demographics
 - More diversity
 - Less prepared
 - The swirl
- Sea of Red Ink
 - Institutional debt
 - State role in higher ed
 - Family ability to pay
- Improved Alternatives
 - Next generation learner
 - Flipped classroom
 - The great unbundling
- Value
 - What am I learning?
 - Will I get a job?
 - Make enough to pay debt?

The Process

The Steps



Adapting the Process



A "Homegrown Horizon Report" Example

The Five Questions

- What would you list among the established technologies that learningfocused institutions should all be using broadly today to support or enhance teaching, learning, or creative expression?
- What technologies that have a solid user base in consumer, entertainment, or other industries should learning-focused institutions be actively looking for ways to apply?
- What are the key emerging technologies you see developing to the point that learning-focused institutions should begin to take notice during the next 3 to 5 years? What organizations or companies are the leaders in these technologies?
- What do you see as the key challenge(s) related to teaching, learning, or creative expression that learning-focused institutions will face during the next 5 years?
- What trends do you expect to have a significant impact on the ways in which learning-focused institutions approach our core missions of teaching, research, and service?

The Question Selected by the Group (12 Participants)

What are the key emerging technologies (with associated companies) you see developing to the point that learning-focused institutions should begin to take notice during the next 3 to 5 years?

First Set of N Replies (N=29)

- 1. Better management tools for the massive amount of information
- 2. Cloud computing of everything
- 3. Completely wireless classrooms with all the technology being delivered at quality comparable to wired technologies. (wireless projection, capturing, etc.) Some wireless delivery is inferior at this point. My A/V guys keep telling me wireless projection isn't as good as wireless, but my CIO wants wireless classrooms.
- 4. Demands of ubiquitous mobility
- 5. Digital technology open access
- 6. Easier and cheaper ways to interact from a distance
- 7. Educational gaming
- 8. Eye control of technologies
- 9. Eye glass retina displays replacing tiny mobile screens.
- 10. Haptic feedback to improve simulation devices.
- 11. High quality video contents online
- 12. Learning objects marketplace with micro payments to faculty authors.
- 13.Merging of assessment management systems, course management systems, enterprise management systems
- 14. Mind control of technologies
- 15. Mobile Learning with Augmented Reality Applications

First Set of N Replies (cont.)

16. Mobile apps for instruction and the educational enterprise

- 17.No more lecture halls, or at least hybrid learning that increases capacity of existing learning spaces.
- 18. Robotics everywhere
- 19. Seamless collaborative tools
- 20. Simulation of all type: devices for medical procedures, virtual sims a la 2nd Life.
- 21. Social learning that is engaging enough to push Facebook etc aside.
- 22.Storm of iPad-like devices of all kinds of size, type, materials, durability, disposability, etc
- 23. Tools that promote critical thinking
- 24. Ubiquitous hand held internet capable device
- 25.Use of e-Portfolio
- 26.Use of video (lite)
- 27. Video recording and assessment of skills training in the field.
- 28.3-projection
- 29.4G

6 Replies Remaining After the First Poll (Sqrt[29]≈6 Tokens Per Voter)

- Better management tools for the massive amount of information
- Cloud computing of everything
- Demands of ubiquitous mobility
- Merging of assessment management systems, course management systems, enterprise management systems
- Mobile Learning with Augmented Reality Applications
- Mobile apps for instruction and the educational enterprise

Top Three Replies Selected in Second Poll (3 Tokens Per Voter)

1.Better management tools for the massive amount of information.

2.Cloud computing of everything.

3.Mobile apps for instruction and the educational enterprise.

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Informing Decision Making: the Delphi Method

Wanted: the Relevant Information Space



Stage 1: Bringing In the Experts



Stage 1: Bringing In the Experts



Stage 1: Bringing In the Experts



Stage 2: Aggregating the Replies



Stage 3: Informing the Process



Stage 4: Selecting the Relevant Information Space



Stage 4: Selecting the Relevant Information Space



Things to Keep In Mind

- Change some, but not all, of your expert panel members each year:
 - Too much change leads to unstable recommendations, too little change leads to groupthink-like phenomena.
- Make sure you have a broad range of expertise and backgrounds in your expert panel:
 - Not everyone should be a technologist, or a teacher, or an administrator.
- Make sure your panel has innovators, opinion leaders, and early majority members (*cf.* Rogers) on it:
 - Panels that only feature innovators tend to produce recommendations that are not representative of the needs of the institution as a whole.

Additional Toolkits

How Innovations Spread (Everett M. Rogers, *Diffusion of Innovations*)



Source: The Innovator Theory. Online at http://www.mitsue.co.jp/english/case/concept/02.html

The Gartner Hype Cycle



Source: GartnerGroup

The Gartner Hype Cycle: Phases and Adoption Types

- Five Phases:
 - Technology Trigger: a new technology generates significant press and industry interest;
 - *Peak of Inflated Expectations*: a flurry of well-publicized activity results in some successes, but more failures;
 - *Trough of Disillusionment*: the technology becomes unfashionable, and the press abandons the topic;
 - Slope of Enlightenment: focused experimentation and solid hard work lead to a true understanding of the technology's applicability, risks, and benefits;
 - *Plateau of Productivity*: the real-world benefits of the technology are demonstrated and accepted.
- Three Adoption Types:
 - *Type A*: technologically aggressive organizations.
 - *Type B*: technologically low risk organizations, focused on maintaining competitiveness.
 - *Type C*: technologically cautious organizations, focused on cost reduction.

The SAMR Model (Puentedura, 2003)

Redefinition

Tech allows for the creation of new tasks, previously inconceivable

Modification

Transformation

Tech allows for significant task redesign

Augmentation

Tech acts as a direct tool substitute, with functional improvement

Substitution

Tech acts as a direct tool substitute, with no functional change

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Qualitative Analysis and the Horizon Report

Automating the Analysis: Wordle



Textual Network Analysis: SNAPP

Social Networks Adapting Pedagogical Practice (SNAPP) Participants 83 312 Posts Visualisation Statistics Export Help Credits Controls-Zoom In Zoom Out Mouse wheel zoom Selection: \$ Transforming Layout: + FR Layout Filter Enable Filtering Filter by Number of Connections: <= 🛟 4 🗘 People Show Names Scale Nodes by Number of Posts Connections Show Posts between Participants Scale Connections by No Posts Line Type 🔘 cubic Iine

Coding and Analysis: TAMS Analyzer

R: {school>trouble}Well, my high school was known as a trouble school. {aspirations}We weren't going anywhere. {/ aspirations}{violence}There were a lot of fights{/violence}, and {truancy}kids, uhm wandering around{/truancy}, and {aspirations}most of us worked in factories on the [city's] east side{/aspirations}. {gratification>delayed}Most of us partied rather than worked.{/gratification>delayed}{/ school>trouble}





gender	positive reason	negative reason	
M	6	4	
F	9	5	

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