The K12 Horizon Report In Context

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Patterns
The 2012 K12 Horizon Report

- **Mobile Devices and Apps**: Time-to-Adoption: One Year or Less
- **Personal Learning Environments**: Time-to-Adoption: Two to Three Years
- **Natural User Interfaces**: Time-to-Adoption: Four to Five Years
- **Tablet Computing**
- **Game-Based Learning**
- **Augmented Reality**
The 2011 K12 Horizon Report

- **Mobiles**: Time-to-Adoption: One Year or Less
- **Open Content**: Time-to-Adoption: Two to Three Years
- **Personal Learning Environments**: Time-to-Adoption: Four to Five Years
- **Cloud Computing**
- **Game-Based Learning**
- **Learning Analytics**
The 2010 K12 Horizon Report

Collaborative Environments

Time-to-Adoption: One Year or Less

Mobiles

Time-to-Adoption: Two to Three Years

Flexible Displays

Time-to-Adoption: Four to Five Years

Cloud Computing

Game-Based Learning

Augmented Reality
The 2009 K12 Horizon Report

- **Collaborative Environments**: Time-to-Adoption: One Year or Less
- **Mobiles**: Time-to-Adoption: Two to Three Years
- **The Personal Web**: Time-to-Adoption: Four to Five Years
- **Online Communication Tools**
- **Cloud Computing**
- **Smart Objects**
Metatrends (Since 2004)

- Evolution of a ubiquitous platform
- Computing in three dimensions
- Shifting content production to users
- Games as pedagogical platforms
- Connecting people through the network
- Communication between humans and machines
- Collective sharing & generation of knowledge
- Shifting content production to users
<table>
<thead>
<tr>
<th>Social</th>
<th>Mobility</th>
<th>Visualization</th>
<th>Storytelling</th>
<th>Gaming</th>
</tr>
</thead>
<tbody>
<tr>
<td>200,000 years</td>
<td>70,000 years</td>
<td>40,000 years</td>
<td>17,000 years</td>
<td>8,000 years</td>
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</tbody>
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- **Social**: 200,000 years
- **Mobility**: 70,000 years
- **Visualization**: 40,000 years
- **Storytelling**: 17,000 years
- **Gaming**: 8,000 years
Context
Key Trends (2012)

• Education paradigms are shifting to include online learning, hybrid learning and collaborative models.

• The abundance of resources and relationships made easily accessible via the Internet is increasingly challenging us to revisit our roles as educators.

• As the cost of technology drops and school districts revise and open up their access policies, it is becoming increasingly common for students to bring their own mobile devices.

• People expect to be able to work, learn, and study whenever and wherever they want.

• Technology continues to profoundly affect the way we work, collaborate, communicate, and succeed.

• There is a new emphasis in the classroom on more challenge-based, active learning.
Significant Challenges (2012)

- Digital media literacy continues its rise in importance as a key skill in every discipline and profession, especially teaching.
- K-12 must address the increased blending of formal and informal learning.
- The demand for personalized learning is not adequately supported by current technology or practices.
- Institutional barriers present formidable challenges to moving forward in a constructive way with emerging technologies.
- Learning that incorporates real life experiences is not occurring enough and is undervalued when it does take place.
- Many activities related to learning and education take place outside the walls of the classroom and thus are not part of traditional learning metrics.
The Process
The Steps
Adapting the Process

Select Team
- Make sure to have a good mix of technologists, faculty, leaders in the group.

Generate Research Database
- Ask group members to submit links to materials of interest, with brief commentary.

Present Research Question(s)
- e.g. “What technologies should colleges be actively looking for ways to apply?”

Review Research Materials
- Ask group to expand database, commentary, with question(s) in mind.

Generate Answer Set
- Ask group members to submit answers to question(s).

First Pass Rankings
- For a set of N answers: give each member sqrt(N) tokens; each distributes tokens between chosen answers.

Create Short List
- Pick top sqrt(N) answers with most total tokens – this is the short list.

Second Pass Rankings
- If M answers are desired: give each member M tokens; each distributes tokens between chosen short list answers.

Produce Report
- Writing team integrates top M answers with research materials to produce report.
Bibliography

- **The Horizon Report:**
  - All editions online at:
    - http://www.nmc.org/horizon

- **Horizon Report Wiki:**
  - All editions since 2006 online at:
    - http://horizon.wiki.nmc.org/

- **Horizon Report Metatrends:**
  - Online at:
    - http://horizon.nmc.org/wiki/Metatrends

- **Ruben R. Puontedura, Technology In Education – The First 200,000 Years:**
  - Online at:
Informing Decision Making: the Delphi Method
Wanted: the Relevant Information Space
Stage 1: Bringing In the Experts
Stage 2: Aggregating the Replies

Expert A

Expert B

Expert C
Stage 3: Informing the Process
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*)

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 (Puenteledura, 2003)

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

**Augmentation**
Tech acts as a direct tool substitute, with functional improvement

**Modification**
Tech allows for significant task redesign

**Redefinition**
Tech allows for the creation of new tasks, previously inconceivable

**Enhancement**
**Transformation**
Bibliography

• **The Delphi Method:**

• **Diffusion of Innovations:**

• **The Gartner Hype Cycle:**

• **The SAMR Model:**
  - Ruben R. Puentedura. *As We May Teach: Educational Technology, From Theory Into Practice*. Online at: https://itunes.apple.com/itunes-u/as-we-may-teach-educational/id380294705?mt=10
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