How can you assess which rapidly changing, emerging technologies have potential value to accounting and IT? One approach is to imagine a radar screen—but instead of radar for aircraft in flight, imagine a radar screen of emerging technologies—Emerging Technology Radar or ET Radar.

Just as a radar screen for aircraft shows flashing blips—some blips moving faster, others slower, some blips becoming larger, others disappearing—some technologies start out as small blips on ET Radar and then become huge. Cloud computing has been around for years under different names, but recently cloud computing became a major trend in business.

Some technologies start out as significant blips on ET Radar but fade away. When was the last time you used a VHS videotape? Other technologies hit the technology radar screen as a large blip from the start.
Consider touchscreen tablet computing—revolutionized by Apple’s iPad in spring 2010. Immediately businesses began rethinking business processes to utilize the iPad in their operations. The impact on business from the beginning was a huge blip on the technology radar and some predict the trend will only increase.

What emerging technologies do you see on your ET Radar? Which technologies are significant blips? Which technologies do you see fading away? Which technology blips do you see as becoming important to accounting in the next one to five years?

**GUIDELINES FOR DEVELOPING YOUR ET RADAR**

Some guidelines for developing your ET Radar — your radar for emerging technologies — that could impact accounting and IT in the future are:

1. **Seek.** Seek out information about emerging technologies from reliable sources. To get started, several of these resources are listed for you in the following sections.

2. **Synthesize.** Use integrative thinking to evaluate resources and disparate information, synthesizing various pieces of information from different resources.

3. **Assess.** Assess the time frame for the emerging technology. Will it start to have traction in 1 year, 2 years, 5 years? Assess the impact of the emerging technology. Will the ET have a high, medium, or low impact on accounting?

4. **Visualize.** Create your personal ET Radar screen. Use drawing software such as Visio or OmniGraffle, to create an ET Radar screen on your computer. Or use an iPad app, such as Adobe Idea or iThoughtsHD, to build an ET Radar, noting the blips of emerging technologies that you see holding promise for the future. If you prefer, use sticky notes on the wall for your ET Radar or draw ET Radar on a window or glass with an erasable marker. In a form of your choosing, create a physical representation of your ET Radar so you can see it. Visualizing your ET Radar is a crucial step in fine tuning it.
5. **Imagine.** Imagine what your ET Radar will look like 1 to 5 years from now. Fast forward into the future and imagine which of the emerging technologies on your ET Radar will take off and which will fade away.

6. **Monitor.** Continue to monitor and update your ET Radar for emerging technologies. For each technology on your ET Radar, consider:
   - Has the technology become mainstream?
   - What are the competing technologies that may supplant the emerging technology?

Continue to update your ET Radar as you see trends changing, fading or gaining a critical mass.

Are you ready to start creating your own ET Radar? Some of the resources that might prove useful for launching your ET Radar for accounting include the following resources and links.

**AICPA**

The American Institute of Certified Public Accountants (AICPA) offers a number of different technology resources for CPAs and IT decision makers. A few of those resources are listed here.

- **AICPA Information Technology Center (IT Center).** AICPA IT Center is an IT resource for CPAs holding the additional credential of Certified Information Technology Professional (CITP) as well as members of the AICPA Information Technology Section.

- **AICPA Certified Information Technology Professional (CPA.CITP).** The CITP credential can be obtained after you pass the CPA Examination. This credential signifies your specialization in information technology.

- **AICPA Top Technology Initiatives Survey.** In 2011, AICPA's Top Technology Initiatives Survey listed mobile technologies, such as smartphones and tablets, in first place. Information security was listed as second. This annual AICPA survey of CPAs specializing in IT is a useful resource for opinions about what other accounting/IT professionals see as the most important emerging technologies for accounting.

- **AICPA Top Technology Questions for Executives Survey.** In 2011, for the first time, the AICPA surveyed CPAs about the top technology questions asked by Chief Financial Officers (CFOs), Chief Information Officers (CIOs), and audit committees. On the AICPA's 2011 Top Technology Questions for Executives Survey, the top five questions
related to safeguarding information assets, such as internal control and cybersecurity.

- **Journal of Accountancy Technology Workshop.** The AICPA’s publication, *Journal of Accountancy*, often features articles of interest related to technology. A recurring feature is the Technology Workshop that provides detailed instructions for IT applications. For example, one *JoA* Technology Workshop featured how to build a digital dashboard using spreadsheet software.

**MIT Labs**

Two Massachusetts Institute of Technology (MIT) labs at the forefront of emerging technologies are:

- **MIT Media Lab.** MIT Media Lab focuses on designing technologies to create a better future, such as smart prostheses for missing limbs and sociable robots to assist with the medical care of the elderly. Visit the MIT Media Lab website to learn more about some of the technology projects, including personal robots and affective computing to help people communicate better.

- **MIT Computer Science and Artificial Intelligence Laboratory (CSAIL).** MIT Computer Science and Artificial Intelligence Laboratory (CSAIL) conducts wide ranging research activities, from robotics to cryptography. For more information about robotics as an emerging technology, visit CSAIL’s Center for Robotics website.

**Stanford University Labs**

Stanford University, located in Palo Alto, California, has several labs related to technology and innovation, including:

- **Stanford Persuasive Technology Lab.** The Persuasive Technology Lab focuses on how machines can be designed to influence human beliefs and behavior to bring about positive changes in health, business, safety, and education.

- **Stanford Student Startup Accelerator (StartX) Lab.** The StartX Lab is a start-up accelerator providing entrepreneurial experience and resources for building innovative companies.

- **Stanford Artificial Intelligence Lab (SAIL).** SAIL projects include work in a new field of robotics, which brings robots into the everyday world of people by focusing on robots that work, assist, and cooperate with humans.
ACCOUNTING AND IT CONSULTING FIRMS

Various accounting and IT consulting firms make IT information available online. As a start, check out these resources:

- **Accenture.** At [Accenture Technology Labs](https://www.accenture.com/us-en/services/technology-labs) read about Accenture’s vision for key technology trends.


- **Ernst & Young.** Check out [Ernst & Young Careers on Facebook](https://www.facebook.com/ernstyoungcareers).

- **Gartner, Inc.** Gartner is a respected leader in IT research, advising executives in 80 different countries. Note that some of the research is restricted and only available for a fee. A workaround for this is to conduct an Internet search for Gartner research to locate other articles referencing Gartner’s research findings.

TECH RESOURCES

Other technology resources that might be useful in building your ET Radar are:

- [CFO.com](https://www.cfo.com)
- [CIO.com](https://www.cio.com)
- [CIOInsight.com](https://www.cioinsight.com)
- [Cnet.com](https://www.cnet.com)
- [Bnet.com](https://www.bnet.com)
- [ZDnet.com](https://www.zdnet.com)
- [Wired.com](https://www.wired.com)

TECH FAVORITES

Here are a couple tech favorites for technology insights:

- [BBC Technology](https://www.bbc.com/technology)
- [Walt Mossberg All Things Digital](https://www.waltmossberg.com)
Change Management and Emerging Technologies

Have you ever asked yourself: Why didn’t I make that change before? Was it because you were comfortable with the familiar? Was it because you were uncertain what the result would be? If so, you are not alone. Now imagine being responsible for not only managing your own change—but managing change for an entire project team—or an entire organization.

Emerging technologies can be exciting and terrifying at the same time. As you may recall from Chapter 1, there are three keys to success in any accounting system: people, processes, and technology. A change in technology may require change in the other two keys to success: processes and people. Changing technology can require an organization to revamp processes. Changing technology may require people to change how they perform their work.

Emerging technologies may have the potential to save employees hours of work, but if the change is uncomfortable for employees to make, there may be resistance to the change. So a crucial consideration when evaluating emerging technologies is the ability to implement the technology and manage the change it requires to be successful. Often managing the people component can be more challenging than managing processes or technology. Failure to manage the people component can lead to failure of the technology initiative.

Daryl Conner, author of Managing at the Speed of Change, notes that people choose the comfort of familiarity over the anxiety of the unknown that comes with change. Connor contends that we now live with perpetual change. His managing change model has five stages, starting with Uninformed Optimism, followed by Informed Pessimism, Hopeful Realism, Informed Pessimism, and ending with Change Completion. Think of a time when you encountered change. Did you pass through these five stages? Our emotional responses to change range from immobilization, denial, anger, bargaining, depression, testing, to acceptance. When you have been faced with change, did you encounter one or more of these emotional responses to the change?

For more information about change management, see Managing at the Speed of Change and Project Change Management (www.connerpartners.com/publications.html).
Emerging Technologies To Watch

What are the emerging technologies on ET Radar to watch? See the following ET Radar screen for some ideas, but here is a short list for your consideration:
- Mobile technologies
- Robotics
- Cloud computing
- Social media and collaborative technology

Other emerging technologies on the horizon include 3D printers. That’s right—instead of printing on paper, the printer prints in 3D! Imagine that you find the perfect backpack online. Instead of purchasing it online and waiting for it to be shipped to you, if you had a 3D printer, you could just print the backpack in 3D! Yes, the backpack would come out of the printer! 3D printers are being tested for making products from toys to houses!

For more information about each of these emerging technologies to watch, see www.iAccount.me, Chapter 15, Emerging Technologies to Watch.