

# Sweet IT Trends for 2016

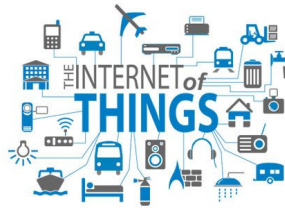
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I-C-E C-R-E-A-M is the acronym of my predictions for the **major IT trends and events that will continue to develop, grow and impact us all in 2016**. These predictions are based upon my: a) work in the IT world, b) review of peer articles to stay current and help prepare for my lectures at USC's School for Systems & Software Engineering, and Southwestern Law School, c) ongoing experiences in large-scale system failure matters in courtrooms all over the world, and d) contributions to the special COCOMO III Estimation Model Development Team (coming out of USC).

References to articles used to inform this piece follow below. Note: There were many predictions made by others that I rejected or was not comfortable enough with to choose for this article... or they just didn't allow me to "dish" I-C-E C-R-E-A-M.

ICE CREAM will impact us all as board members, corporate executives, IT managers, department managers, customers, users, project managers, developers, vendors, consultants, shareholders, etc., in 2016.

## **Internet of Things**



### **The Whimsy:**

*Now, my refrigerator will never run out of munchies and beer again, especially on Super Bowl Sunday. The kitty litter will re-order itself.*

### **The Promises:**

More penetration as automatic, real-time, integrated cogs (of wireless gadgets, devices, chips, and "things") use the Internet. Operational Technologies (i.e., affecting whole industries such as Health, Retail, Energy, Construction, Transportation, etc.) and Information Technologies (i.e., providing real-time automated feedback, recommendations, predictions and predictive solutions to individuals and groups) join forces to make our work and personal lives: safer, more productive, more connected, more meaningful, easier – and perhaps even more successful!

### **The Fears:**

More dependency on data. Removal of self-sufficiency. Individual privacy and physical data security become much larger concerns. Billions of "things" will request support and need to be right, upgradeable, and maintainable – sometimes under un-thought of and/or untested circumstances. Who will be liable for mistakes made by IoT "assets" that trigger predictive warnings or specific actions? Not enough standards!

Too many standards! Not enough regulations

## Cloud<sup>1</sup>



### The Whimsy:

*Oh, yeah! It's secure!! Wait a sec... "Hey, You, Get Off of My Cloud!" – The Rolling Stones*

### The Promises:

Less cost; high flexibility. Cloud costing can be a huge saving as you “only pay for resources as you need them. Or it can be a huge cost if you must pay for peaks or in many cases just because you are “renting” over time rather than buying once.”<sup>2</sup>

### The Fears:

Optimistic assumptions about people savings may not come true. You still need people but with different skillsets and focuses. How private and secure is your cloud? Who controls the data? Vendors typically provide well-secured clouds, but customers/users can be sloppy and cause the vast number of failures/breaches. In the next few years, the number of cloud providers will shrink – will your provider survive?

## ERP<sup>3</sup>

### The Whimsy:

*No, Betty, not Exaggerated Ruinous Poppycock, but...*

### The Promises:



**Enterprise resource planning (ERP)** is a suite of integrated applications providing streamlined business processes and transaction management across the whole organization, better decision-making, increased cost efficiency, improved profitability and competitive advantage. Increased hybridization (computing on-site, hosted, and in the cloud) reduces ERP costs and takes advantage of Mobile and Cloud flexibility. Selected best-of-breed modules rather than one in-house ERP solution will become more popular for small to mid-size companies.

### The Fears:

Best-of-breed will increase integration difficulties as more providers are added. Loss of data control worries will occur as companies move multiple ERP data solutions beyond “the four walls.” Legacy data cleansing, transformation, and testing will be more challenging than ever. The “new and improved” ERP systems will continue to be very complex and costly to customize. ERP is still about Business Process Re-engineering and

<sup>1</sup> [https://en.wikipedia.org/wiki/Cloud\\_computing](https://en.wikipedia.org/wiki/Cloud_computing)

<sup>2</sup> <http://galorath.com/cloud-costing-conference-november-2015/>

<sup>3</sup> [https://en.wikipedia.org/wiki/Enterprise\\_resource\\_planning](https://en.wikipedia.org/wiki/Enterprise_resource_planning)

Organizational Change Management. How will your organization best use it? Where will all the onsite, Go-Live experts come from at cutover? How many? For how long?

## **C**rowdsourcing<sup>4</sup>

### **The Whimsy:**

*We finally have enough people to do the Macarena.*

### **The Promises:**

Access to better ideas, innovations, and problem solutions from outside the company. Advantages claimed include costs, speed, quality, scalability, flexibility, and diversity.

### **The Fears:**

Who owns the new solution, patents, trade secrets? How will they be protected? How will you protect older corporate IP? Crowd demographics are unknown and not randomly selected. How will you implement the crowd solution into your corporate operations/culture? A good solution, in theory, may be a bad solution match for your organization, which can lead to administrative nightmares. Must learn how to manage a crowd, which is different from managing a team of employees.



## **R**obotics

### **The Whimsy:**

*“Danger, Will Robinson!! Danger!!!!” – Lost in Space*

### **The Promises:**

Higher productivity, better quality, more consistency, more capability, more profit, less human on-the-job injuries, less fatigue.

### **The Fears:**

*Skynet and HAL... Wait..., I mean loss of jobs, loss of know-how, loss of human intuition, loss of company values and intimacy. Especially in Manufacturing and Sales & Distribution, you may get a robo-boss who can/will effectively schedule you, your work, your time, and the tools & resources you need. It can measure your production/output, and create a “scorecard” of your productivity for HR and your human bosses.*



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<sup>4</sup> The Starbucks crowdsourcing platform, My Starbucks Idea, started in March 2008. Of the over 190,000 product, in-store experience, and community involvement ideas, almost 300 have been implemented improving profitability, customer loyalty, and the brand (including free wi-fi; new flavors; happy hour; free birthday treat; splash sticks; mobile payment). The best-known crowdsourcing example of 2016 is Kickstarter’s crowdfunding model. <http://smbp.uwaterloo.ca/2015/02/my-starbucks-idea-the-starbucks-crowdsourcing-success-story/> <https://en.wikipedia.org/wiki/Crowdsourcing>

## **E-Business** (especially B2C)

### **The Whimsy:**

*Finally, Target can send me just the right coupons in my junk mail.*

### **The Promises:**

'Instant Gratification in your underpants.' Virtually all products, sizes, colors are available – and cheaper. For those who know how to use it – less hassle. "Prime"; easier and sometimes free shipping and returns; faster deliveries; vetted by other purchasers.

### **The Fears:**

Loss of privacy; personal information, credit card/social security numbers hacked - security risks; reduced personal interaction; cannibalization of brick and mortar stores.



## **Analytics**

### **The Whimsy:**

*Which AL-GORE-ITHM predicted Trump would do so well?*

### **The Promises:**

More personalized communications; customer closeness. Analytics (incl. big data, machine learning & AI) is transforming nearly all industries. Its use is at the early stages, but Analytics will be an important area in enterprise IT for the foreseeable future, providing formerly unavailable analyses, insights, decisions, KPIs.<sup>5</sup>

### **The Fears:**

There will not be enough educated data scientists/chief analytics officers to staff the new positions. Analytics will enable more customized spear-phishing as well as more targeted fraud and loss of privacy to those most susceptible. Requires huge storage space. May create new KPIs that those being evaluated don't like or understand.



## **Mobile enterprise transformation**

### **The Whimsy:**

*"You never call me on my cell phone..." - Drake*

### **The Promises:**

Increased mobile access and planning /transactional capability affecting the core functions of the enterprise – not through just apps conceived for mobile devices to send data to the central systems – but to create more powerful interfaces using new enterprise mobile GUI standards, and expanded centralized enterprise systems to impact/improve core enterprise operations, workflows and dashboards. The ability



<sup>5</sup> <http://www.cio.com/article/3006976/it-industry/5-it-industry-predictions-for-2016-from-forrester-and-idc.html>

to perform work from anywhere, anytime, providing faster turn-around, more real-time data, quicker end-to-end processing, improved collaboration within, across and between departments, and follow-up decision capabilities. Improved user experience.

### **The Fears:**

More dependency on an always available, efficient, and reliable network. Less efficiency because of constant “connected” interruptions. Computer and server security have to be adapted to accommodate a much wider range of devices and apps. Increased development, support costs, and management costs, including interfacing with mobile-unfriendly legacy systems. 24 hr. on-call personnel burnout.

**In conclusion,** each of the ingredients making up the 2016 ICE CREAM prediction is going to grow – some more noticeably, others behind the scenes; with some innovations and industries taking the lead over others.

In any case, singly, or as groups, I-C-E C-R-E-A-M will continue to impact our work, creative, family and leisure lives, and make things easier, faster, safer and happier,

or conversely,

more difficult, slower and more frustrating –

as all new/evolving innovations are wont to do before they become mature!

Clearly there are other factors which will help drive the above trends over time. The promise of new business models – such as Alibaba.com which owns no inventory; Airbnb.com which owns no lodging; and Uber.com which owns no auto-fleet – is just emerging. Also, it remains to be seen how the fears of insecure systems: hacks, glitches (like the minor stock crashes), backdoor entrances, stolen / lost e-currencies, and cyberterrorism will either outweigh or be overcome by our desire for convenience.

We’ll check back in 2017, to see if I should have selected something sweeter – like M-A-R-S-H-M-A-L-L-O-W-S? Or something bitter – like D-A-R-K C-H-O-C-O-L-A-T-E.

Let me know what you think of my list!

### **Additional References:**

Robotics and Cloud Computing: <http://www.gartner.com/newsroom/id/3143718>

Images: [www.dreamstime.com](http://www.dreamstime.com); <http://omarketingo.com/assets/img/mobile-apps/mobile-apps-benefits.png>