Technology That Your Future Employer Wants You To Know

Date: November 16, 2016

Presented by: Jesse Dahir-Kanehl, Willie Spindler, Fred Spademan

Agenda

- Introductions
- Who Is Inland?
- Why are we here?
- What Skills & Technologies Today?
- What Skills & Technologies Tomorrow?
- Q&A

Introductions

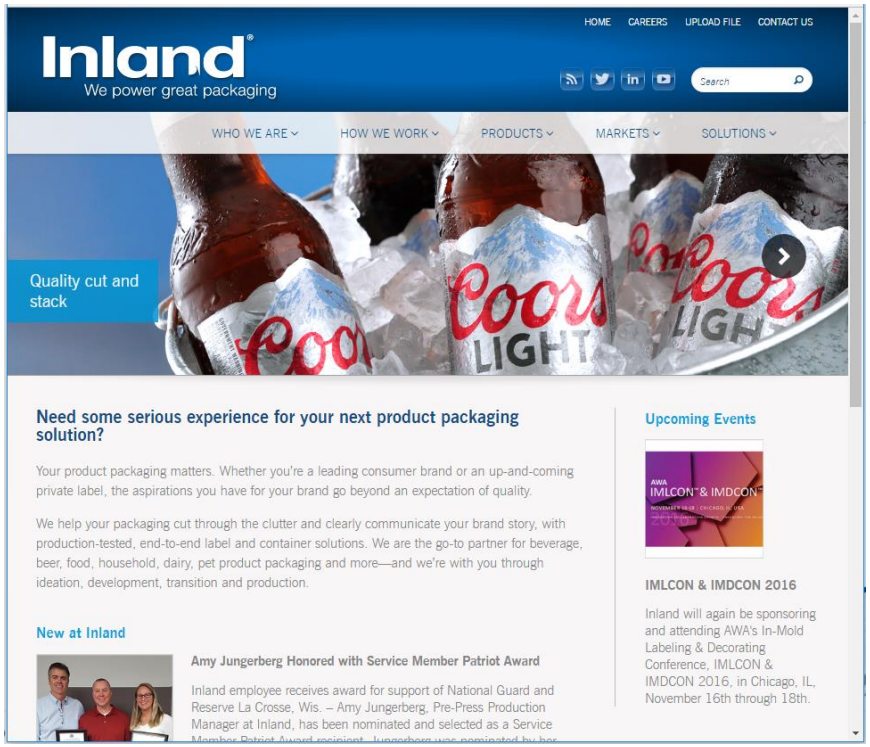
- Jesse Dahir-Kanehl
- Willie Spindler
- Fred Spademan

Who Is Inland?

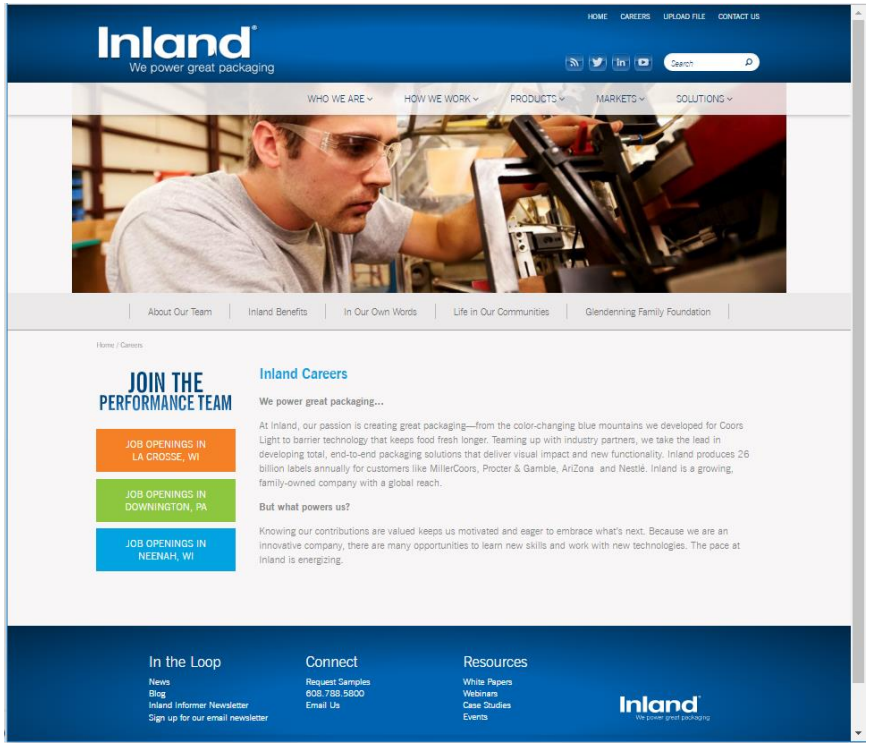
- **We power great packaging**
  - We team up with industry partners and take the lead in developing total, end-to-end packaging solutions that deliver exactly what brand owners want.
- **But what powers us?**
  - Job Satisfaction – People stay at Inland.
  - We collaborate with customers, strategic partners and each other, because it's great to accomplish things together.
    - We are inquisitive, eager to address old problems in new ways. We value creativity.
    - We all value earning our customers' trust. Hearing "thanks" is a powerful motivator.
    - We respect the contribution of each team member and create opportunities for everyone to grow.
    - We're connected to our communities in meaningful ways, enthusiastically investing in what's important to us.

Who Is Inland?

InlandPackaging.com



InlandPackaging.com/inland-careers



Why Are We Here This Afternoon?

- We see talented, smart students with energy and drive, *but* missing specific key skills and competencies that are common in the working world
- Business projects are different than school projects
- If you combine your passion and drive with technologies that businesses are using, you get a leg up on your career

Our Premise

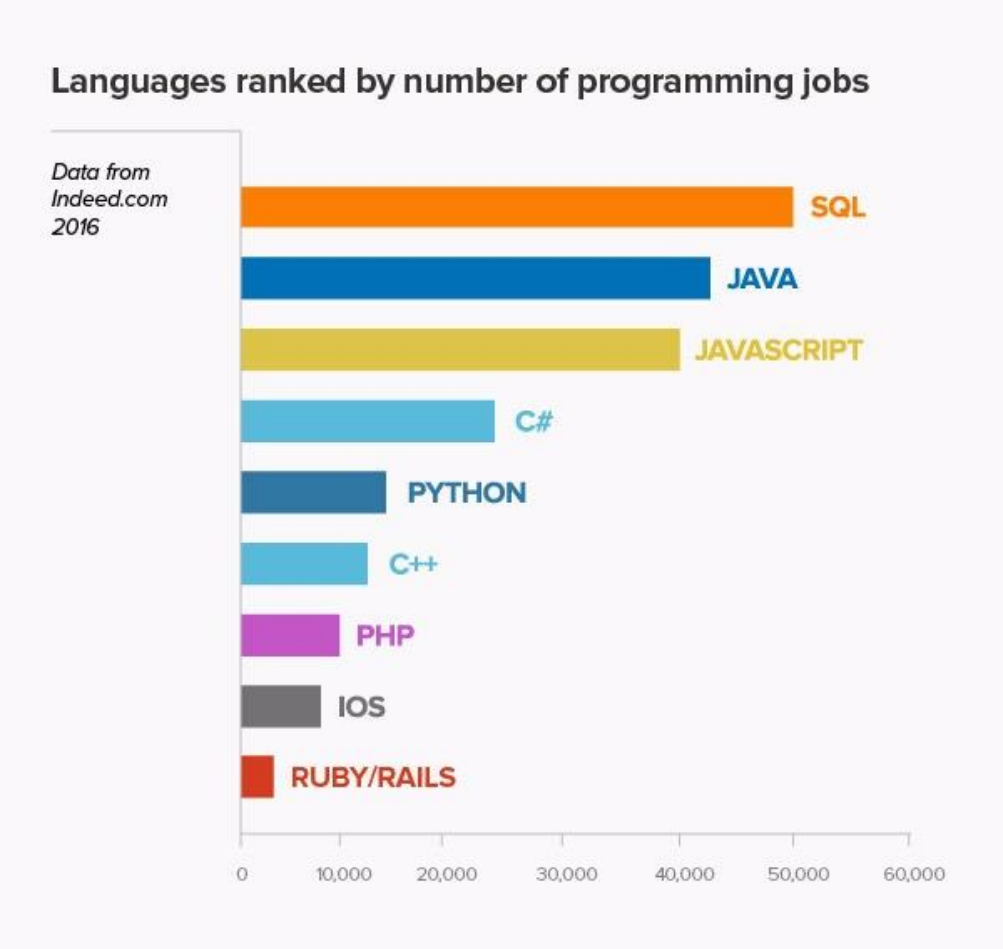
- Passion and projects outside of the classroom are differentiators
- You should learn some key technologies & skills that aren't taught at UWL, particularly including Microsoft application development products
  - They are widely used but we don't see those skills in most recent graduates
  - Includes especially Visual Studio, .NET, MS SQL

What do I need to know, right now, today?

Business Realities

- Trend is mobile and browser based, not desktop client based
- Much development is on existing systems – maintenance and extension
  - You live with the work you've done
- Most software is not the end product, it supports the end product
- Knowing MS products like Visual Studio and MS SQL is valuable

Programming Jobs by Languages (Indeed.com)



- MS SQL #1
- Javascript #3
- C# #4

Top IDE Index (http://pypl.github.io/IDE.html)

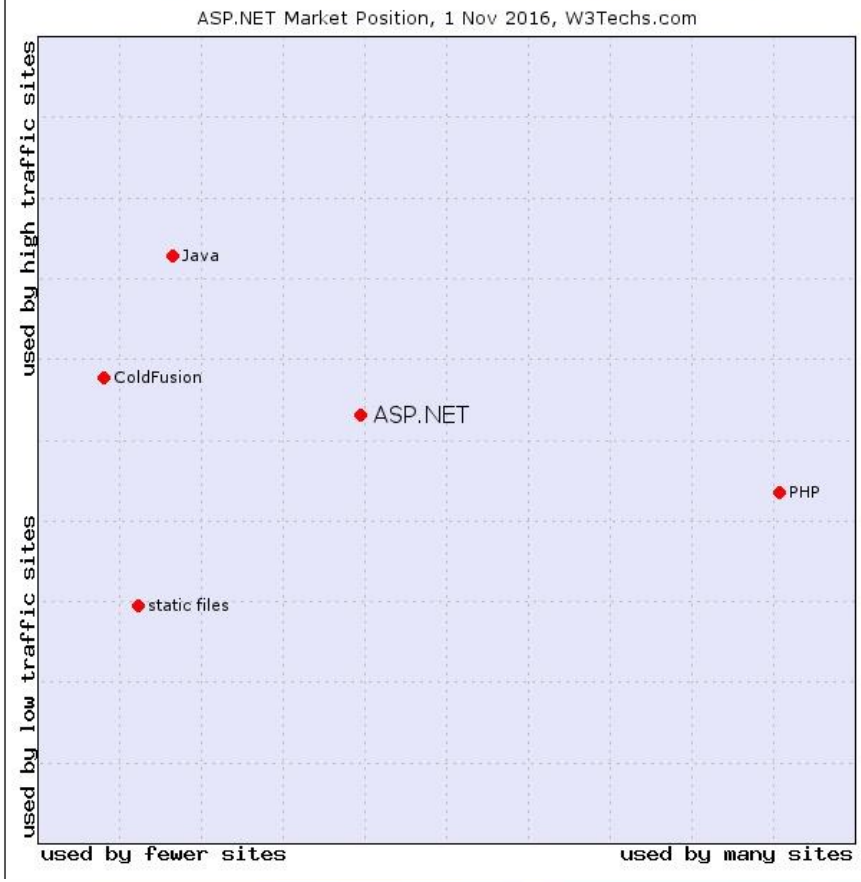
RANK	CHANGE	IDE	SHARE	TREND
1	↑	Visual Studio	22.17 %	-0.9 %
2	↓	Eclipse	21.26 %	-5.4 %
3		Android Studio	10.19 %	+2.2 %
4		Vim	8.21 %	+0.6 %
5		NetBeans	5.5 %	-0.2 %
6		Xcode	5.45 %	-0.5 %
7		Sublime Text	4.34 %	+0.2 %
8	↑	IntelliJ	4.22 %	+1.2 %
9	↓	Komodo	3.6 %	+0.5 %
10	↑	Xamarin	3.55 %	+2.4 %
11	↓	Code::Blocks	2.1 %	-0.3 %
12		Emacs	1.93 %	+0.2 %
13	↑	pyCharm	1.68 %	+0.4 %
14	↓	PhpStorm	1.54 %	+0.2 %
15	↑	Light Table	1.1 %	-0.1 %
16	↓	Cloud9	0.88 %	-0.2 %
17	↑	Qt Creator	0.38 %	+0.0 %
18	↓	Aptana	0.31 %	-0.1 %
19		JDeveloper	0.29 %	+0.0 %
20		geany	0.28 %	+0.0 %
21		MonoDevelop	0.22 %	+0.0 %

- Most used is MS Visual Studio
- Xamarin is #10 and rising

ASP.NET (W3Techs.com)

Market position

This diagram shows the market position of ASP.NET in terms of popularity and traffic compared to the most popular server-side programming languages.
Our dedicated market survey shows more server-side languages market data.

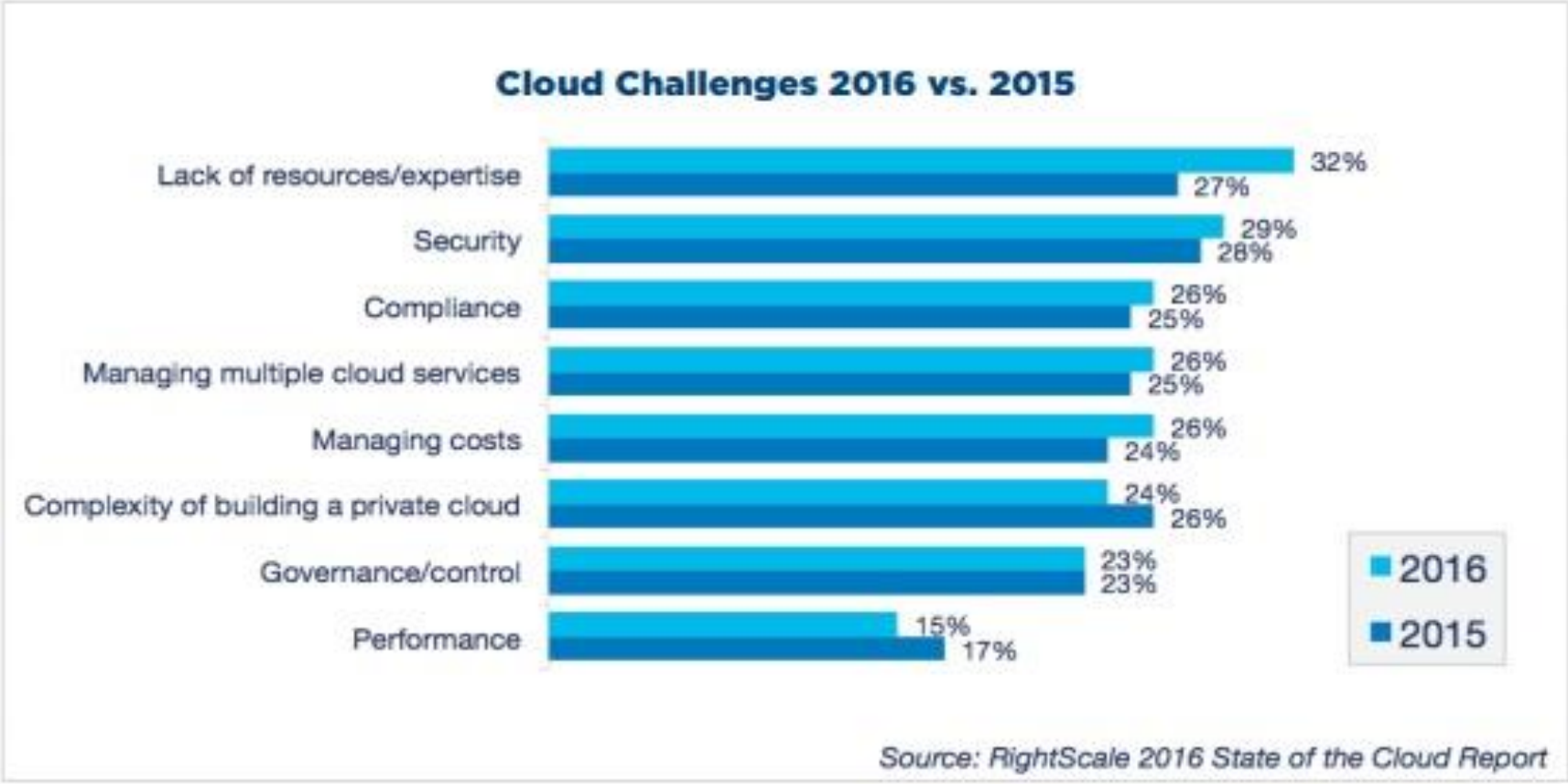


- This is an eye test
- MS's ASP.NET is used by more total sites than Java
- Supports more high volume sites than PHP

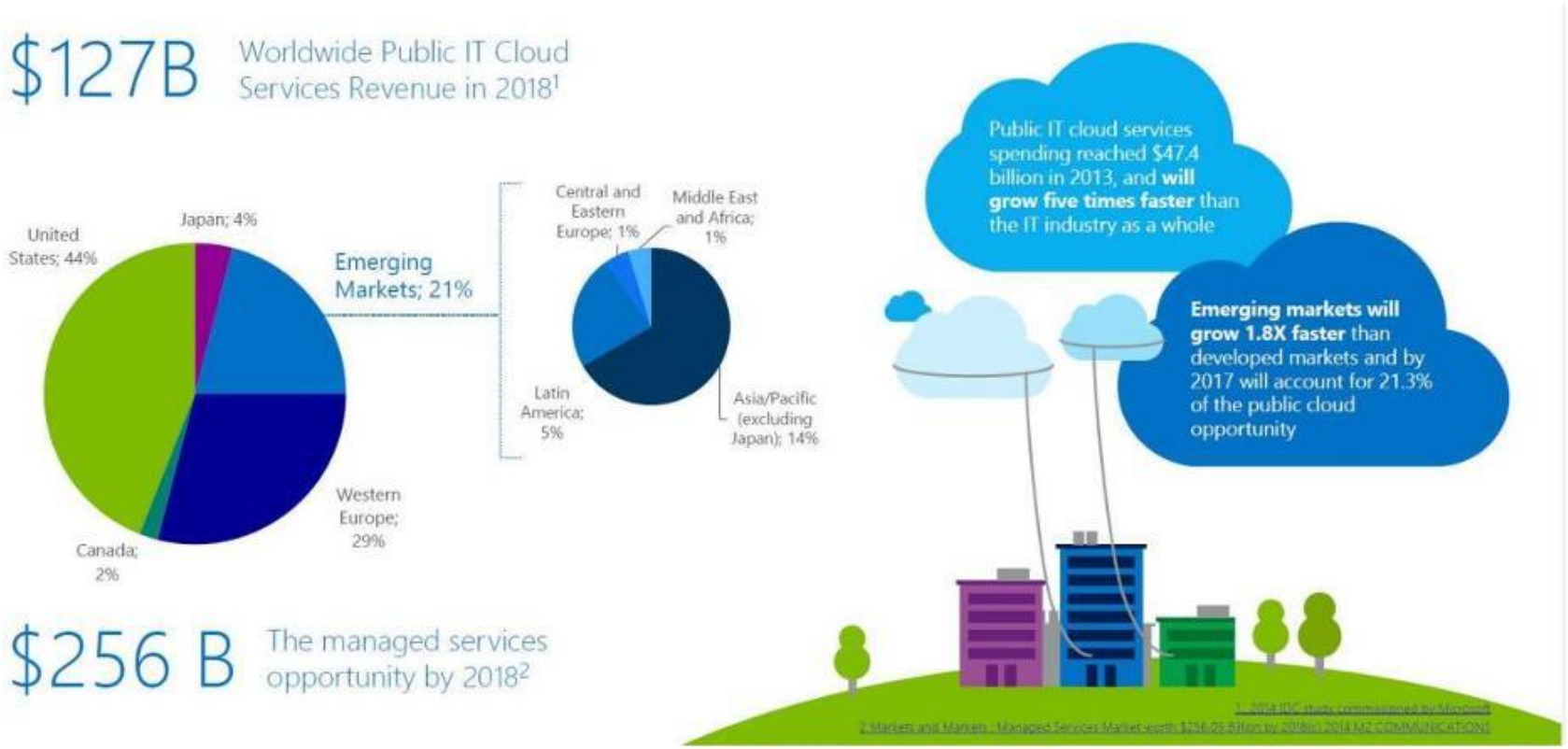
Get To Know The Cloud

- What is cloud?
  - Something-as-a-Service
    - Infrastructure-as-a-Service, Platform-as-a-Service, Software-as-a-Service, Security-as-a-Service, etc.
  - Benefits
    - Scalability
    - Automating the plumbing
    - Lower initial cost but not always cheaper
    - Experts handle some of the administrative burden (esp. security, patching)
  - Lots of cloud providers but really four big ones
    - MS Azure, Google, Amazon, Rack Space
  - Not yet any clear winner
    - Multi-vendor is common
    - Linux/Open Source stack and MS stack
- MS Azure – wide and deep in its offering
  - Student friendly
  - Changes weekly – opportunity to become an expert

Cloud Challenges



Opportunity In The Cloud (IDC Study – MS)



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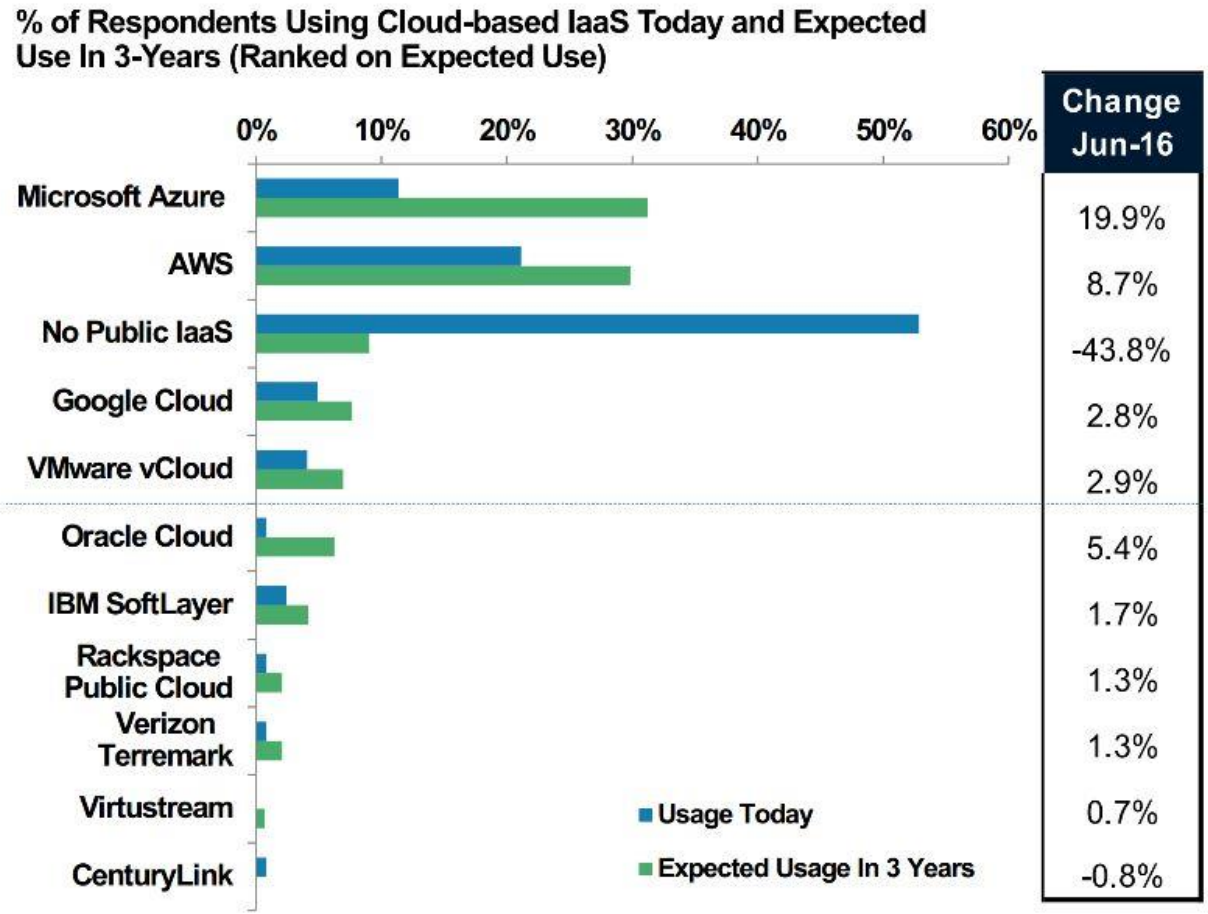
Growth In The Cloud

Exhibit 15: Cloud-based Iaas Use Today and Expected Use in Three Years



What Will You Want To Know Tomorrow?

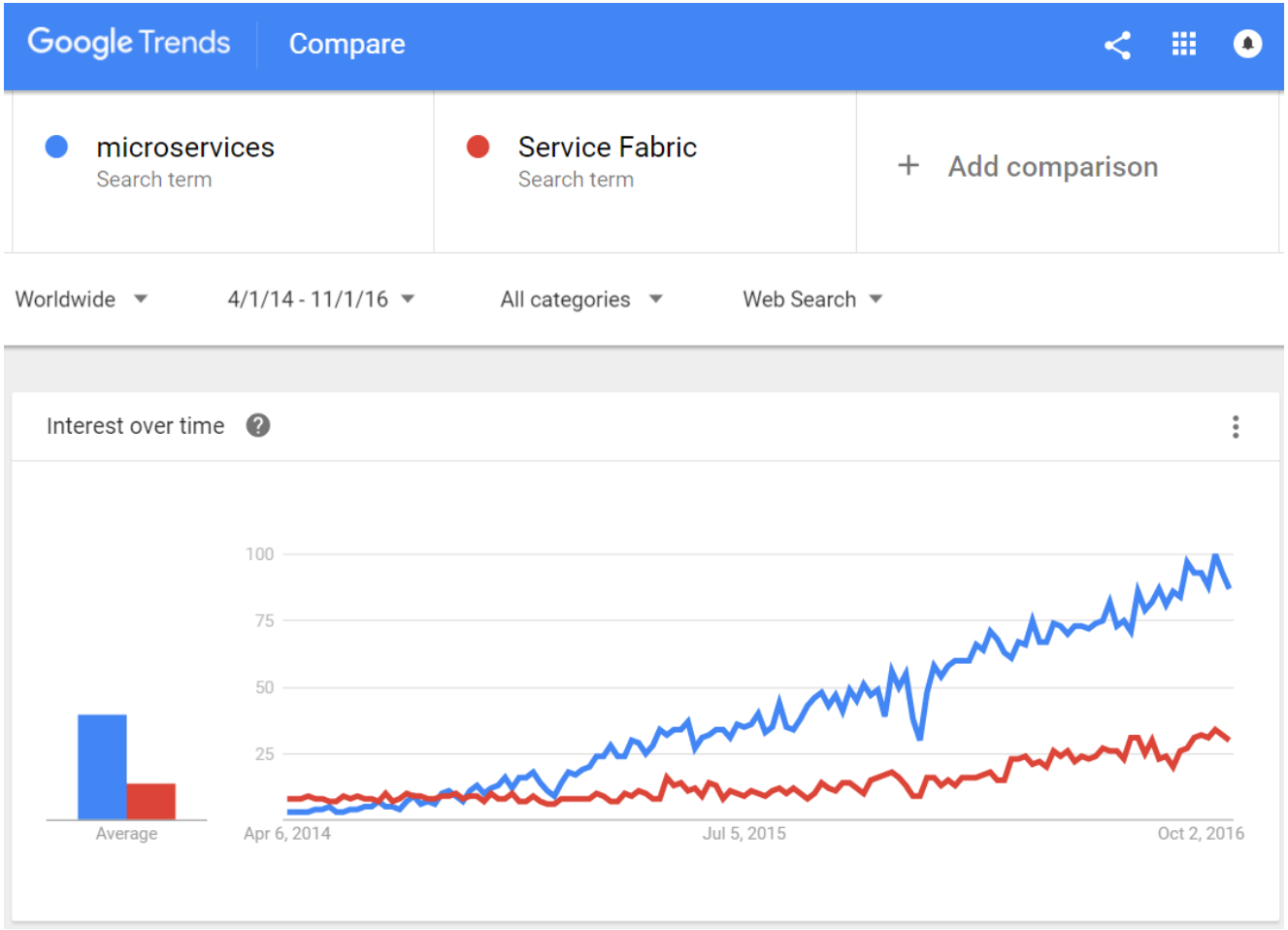
Microservices and Service Fabric

- Technology of the near future
- Small, very efficient building blocks communicating with language-agnostic APIs
- A whole new way of thinking about applications and processes
- Developing Market
  - Amazon Lambda, IBM Bluemix, Heroku, Pivotal, Spring Cloud, Microsoft Azure Service Fabric, etc.

Why Microservices and Service Fabric?

- Smaller codebases make maintenance easier and faster.
  - Saves development effort and time, therefore increases overall productivity.
  - The parts of an application can be scaled separately and are easier to deploy.
  - Do not require teams to rewrite entire application to add new features.

Market For Microservices and Service Fabric



Market For Microservices and Service Fabric

- Big online companies are strong advocates
  - Netflix, Twitter, EBay, Spotify, Amazon, Microsoft
- Very new as a technology offering
  - MS Azure Service Fabric – March 2016
  - Docker & MS Server – October 2016
    - Bundled into MS Server 2016 at no add'l cost

AI & Machine Learning (forbes.com)

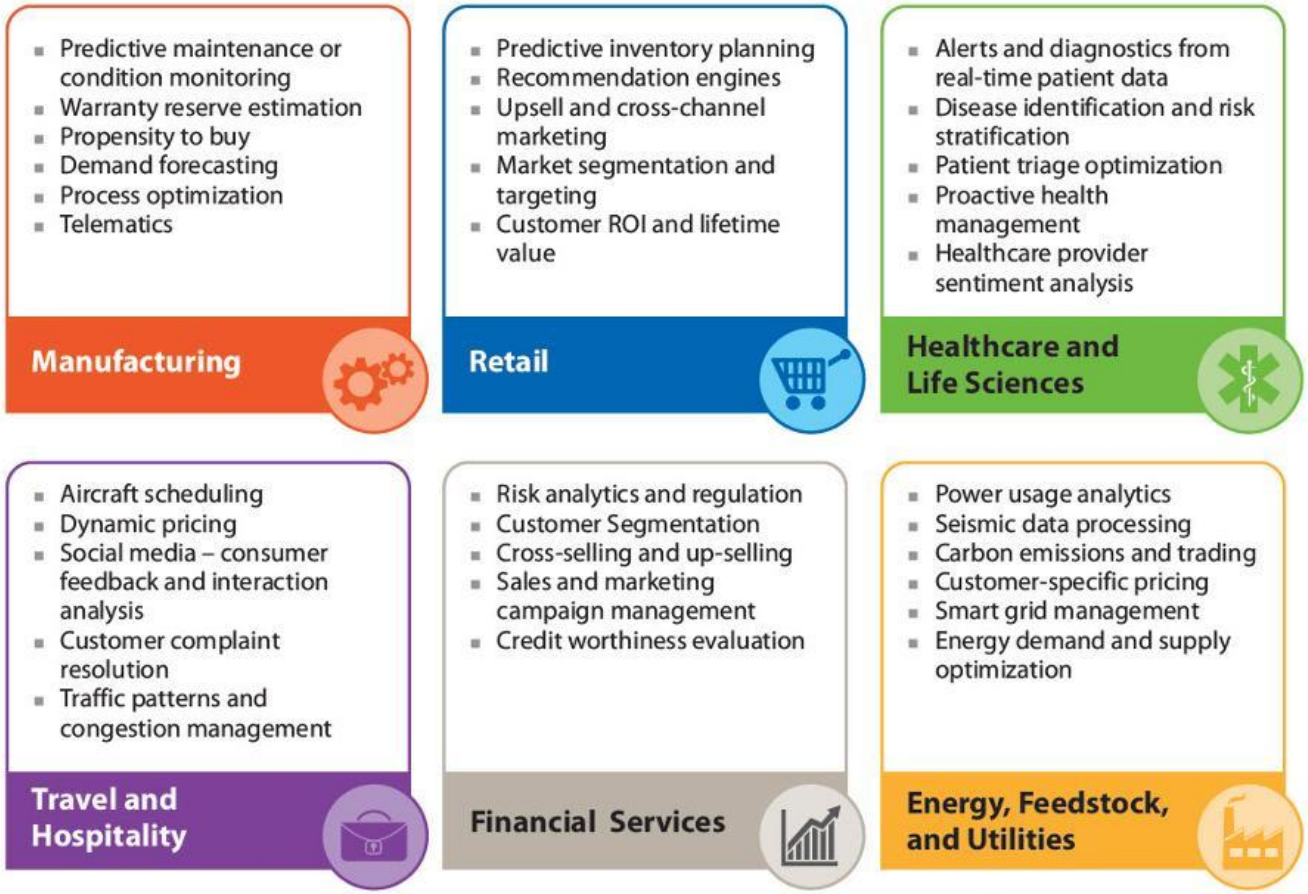
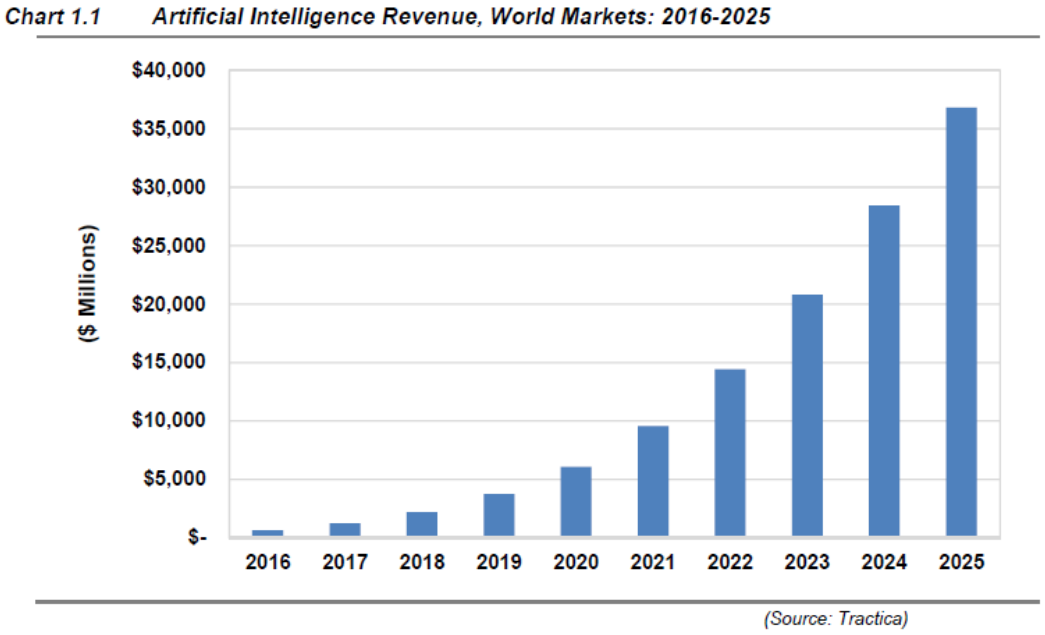


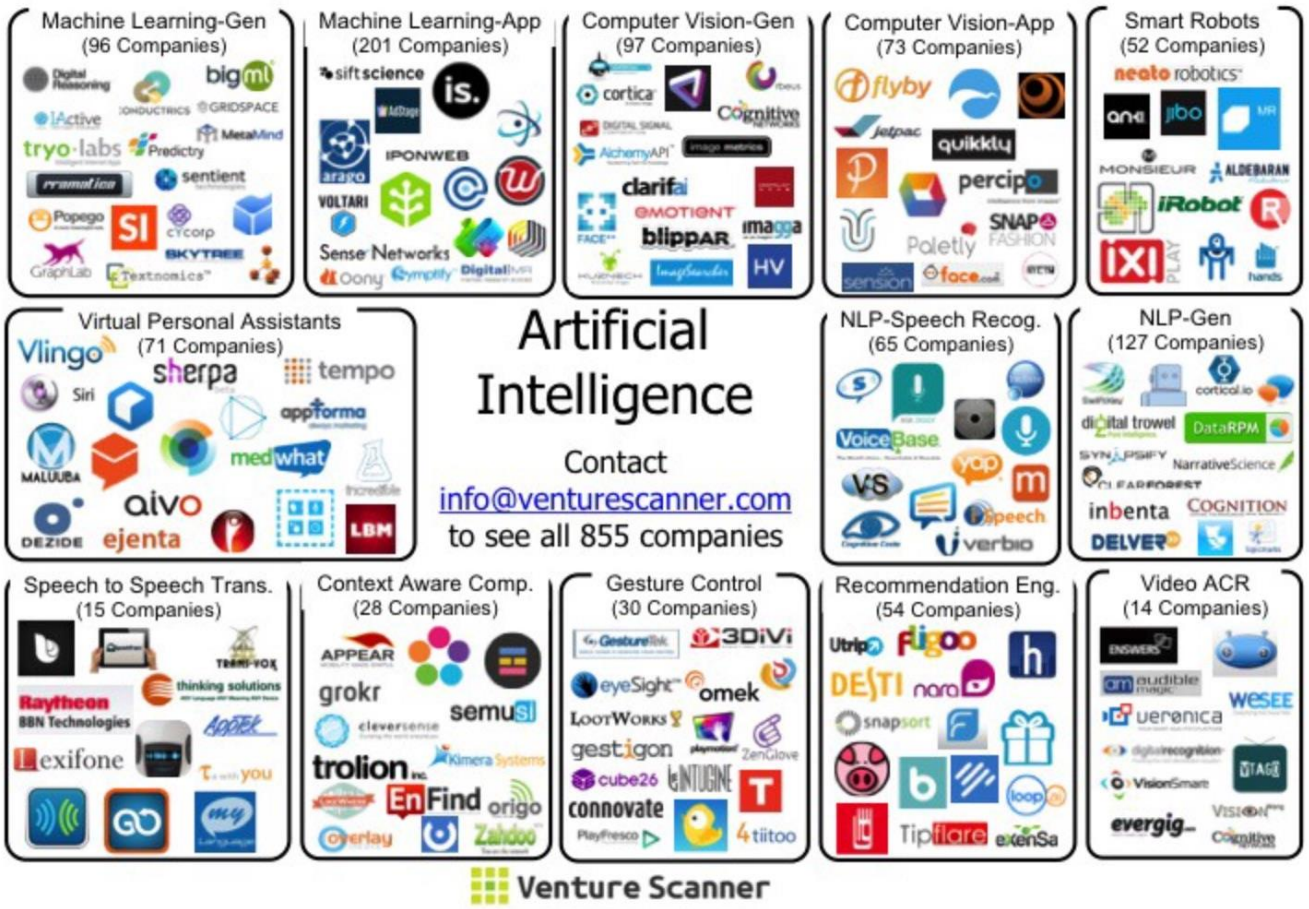
Figure 2: Machine Learning applications across industries

AI & Machine Learning – Exponential Growth



- The MLaaS market size is estimated to grow from USD 613.4 million in 2016 to USD 3.7 billion by 2021 (researchandmarkets.com)

AI & Machine Learning Eye Chart (venturescanner.com)



AI & Machine Learning - Microsoft

- MS creates new Microsoft AI and Research Group - https://news.microsoft.com/2016/09/29/microsoft-expands-artificial-intelligence-ai-efforts-with-creation-of-new-microsoft-ai-and-research-group/#sm.000rqivnfehueih10hu11t23f2zow
  - ". . . more than 5,000 computer scientists and engineers focused on the company's AI product efforts."
- Microsoft is taking a four-pronged approach to its initiative to democratize AI:
  - **Agents.** Harness AI to change human and computer interaction through agents such as Cortana
  - **Applications.** Infuse every application with intelligence
  - **Services.** Make the same intelligent capabilities in Microsoft's apps — cognitive capabilities such as vision and speech, and machine analytics — available to every application developer in the world
  - **Infrastructure.** Build the world's most powerful AI supercomputer with Azure and make it available to anyone, to enable people and organizations to harness its power

IOT

- Defining IOT – Difficult for our purposes
  - Not just Raspberry PI
  - Now things know something
  - Data shared
  - Security

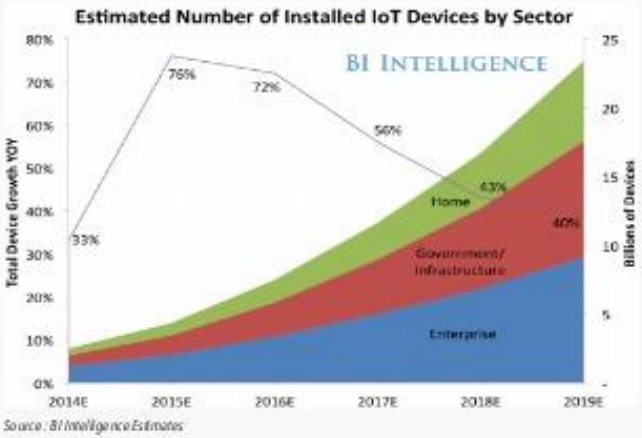
IOT Market Growth (SparkLabs)

MARKET OVERVIEW

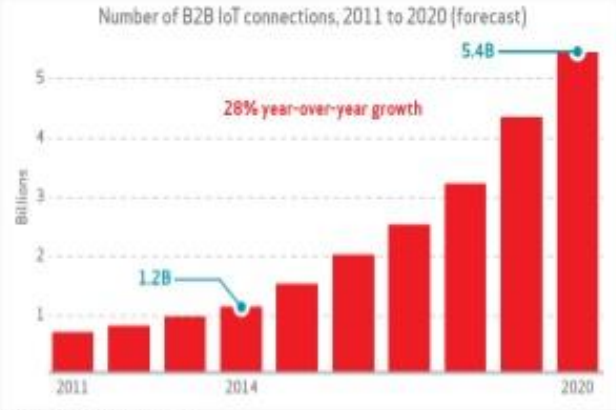
INTERNET OF THINGS & HARDWARE

More Machines are Going Online

As prices for semi-conductors fall and connectivity technology develops, more machines are going online. Appearance of smart objects is the main driver of IoT industry's development.



Source : BI Intelligence Estimates



Source : Verizon's IoT 2015 Report

- The number of IoT devices connected will increase to 25 billion by 2020.
- Connected homes seems to be the leading sector, however, all sectors are expected to exponentially grow.

- Number of B2B IoT connections will greatly increase to 5.4 billion by 2020.
- Organizations that utilize IoT technologies in their products/operations are expected to be 10% more profitable.

SparkLabs Global Ventures

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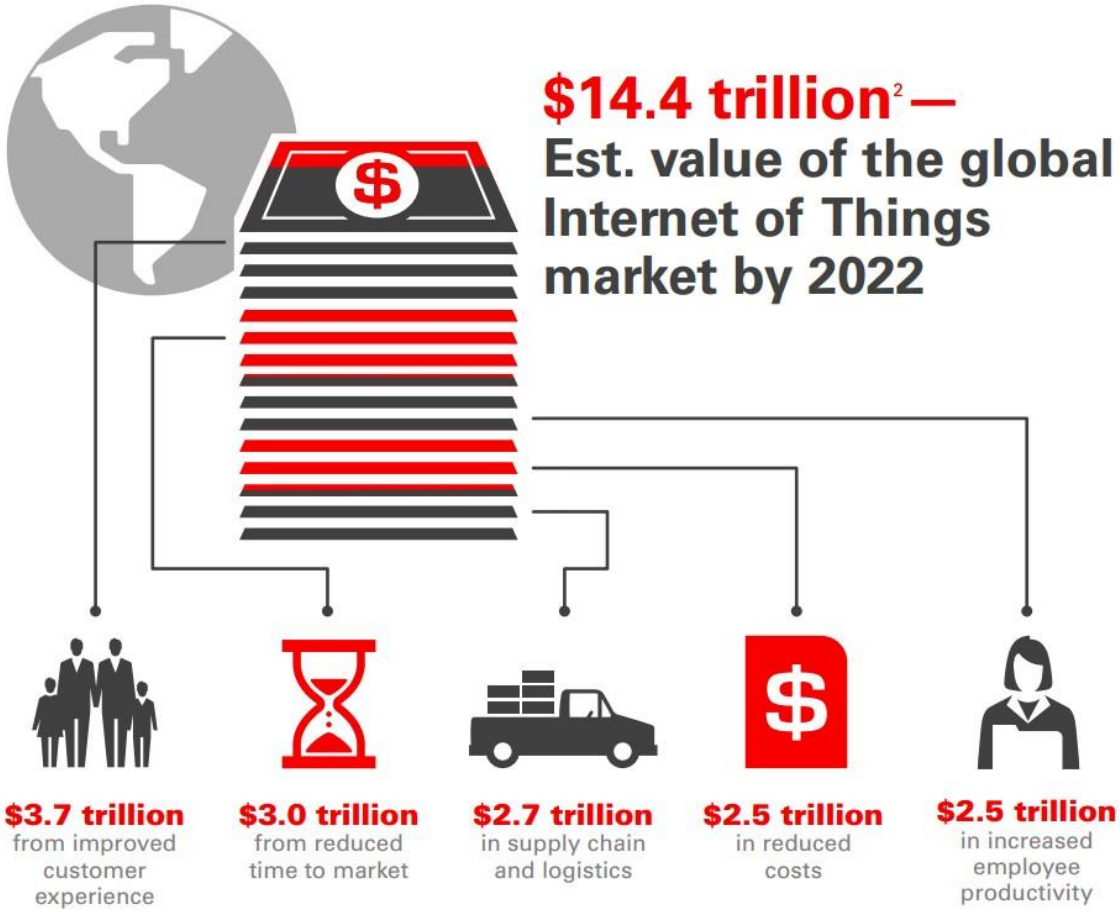
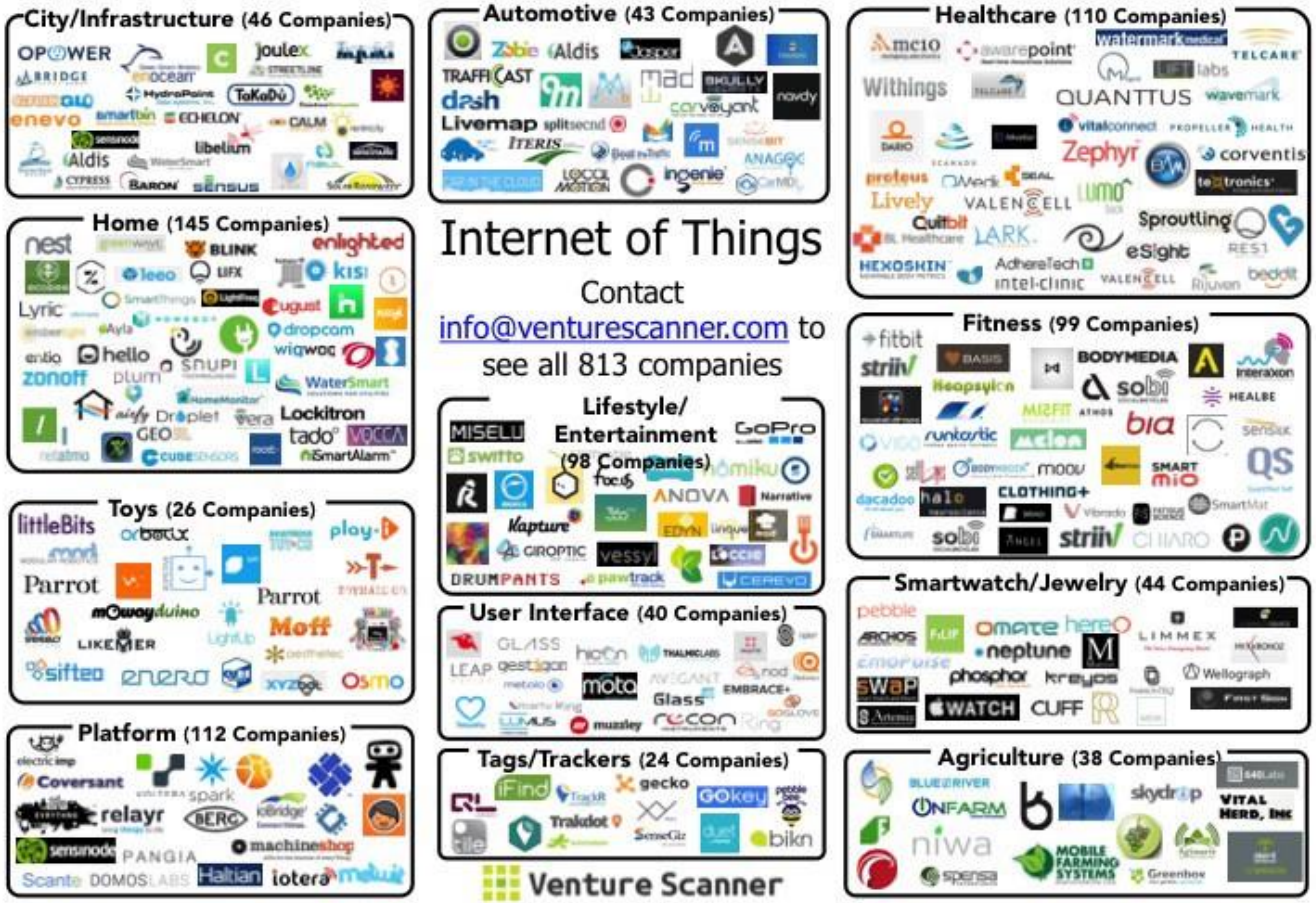
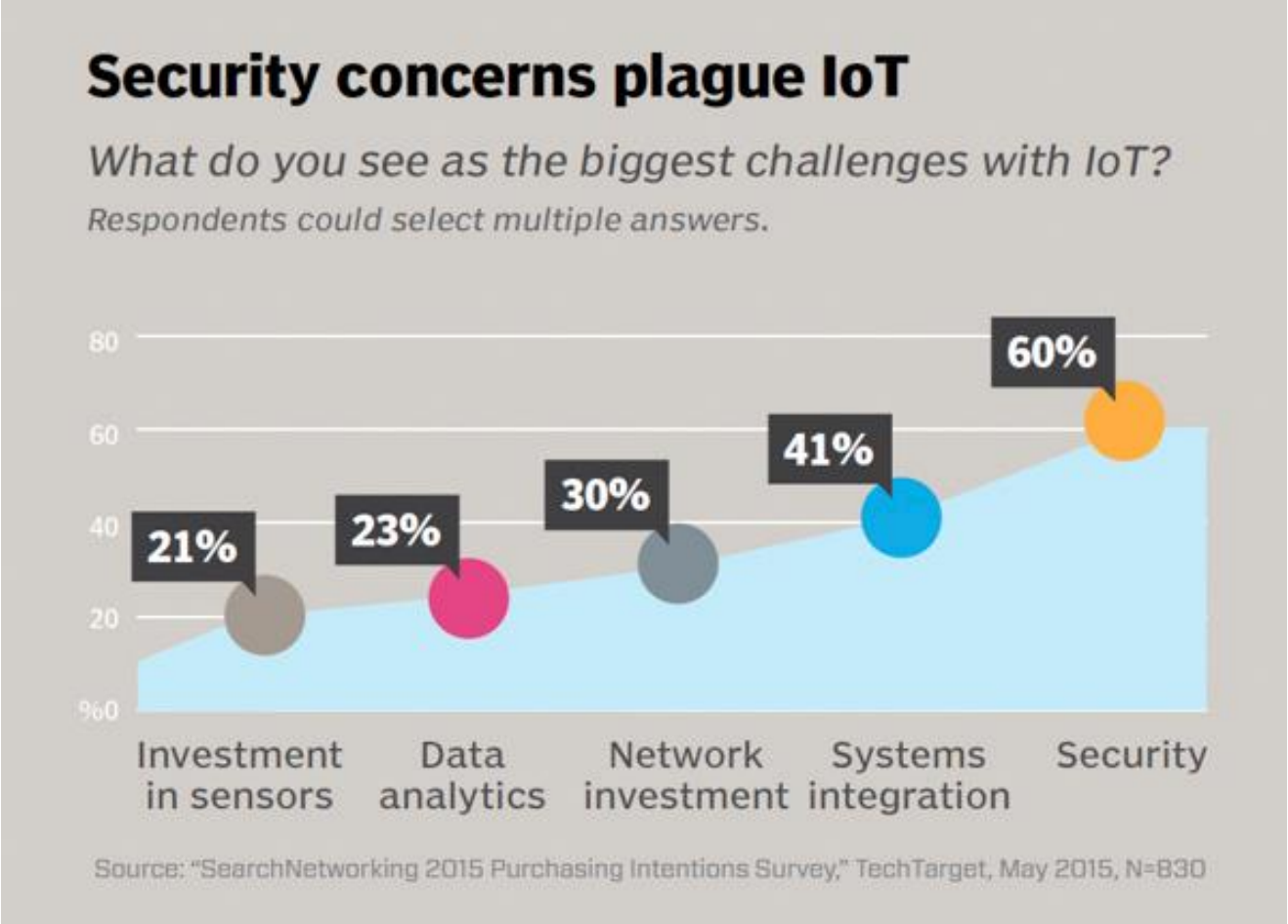
IOT Market Size (Forbes.com)



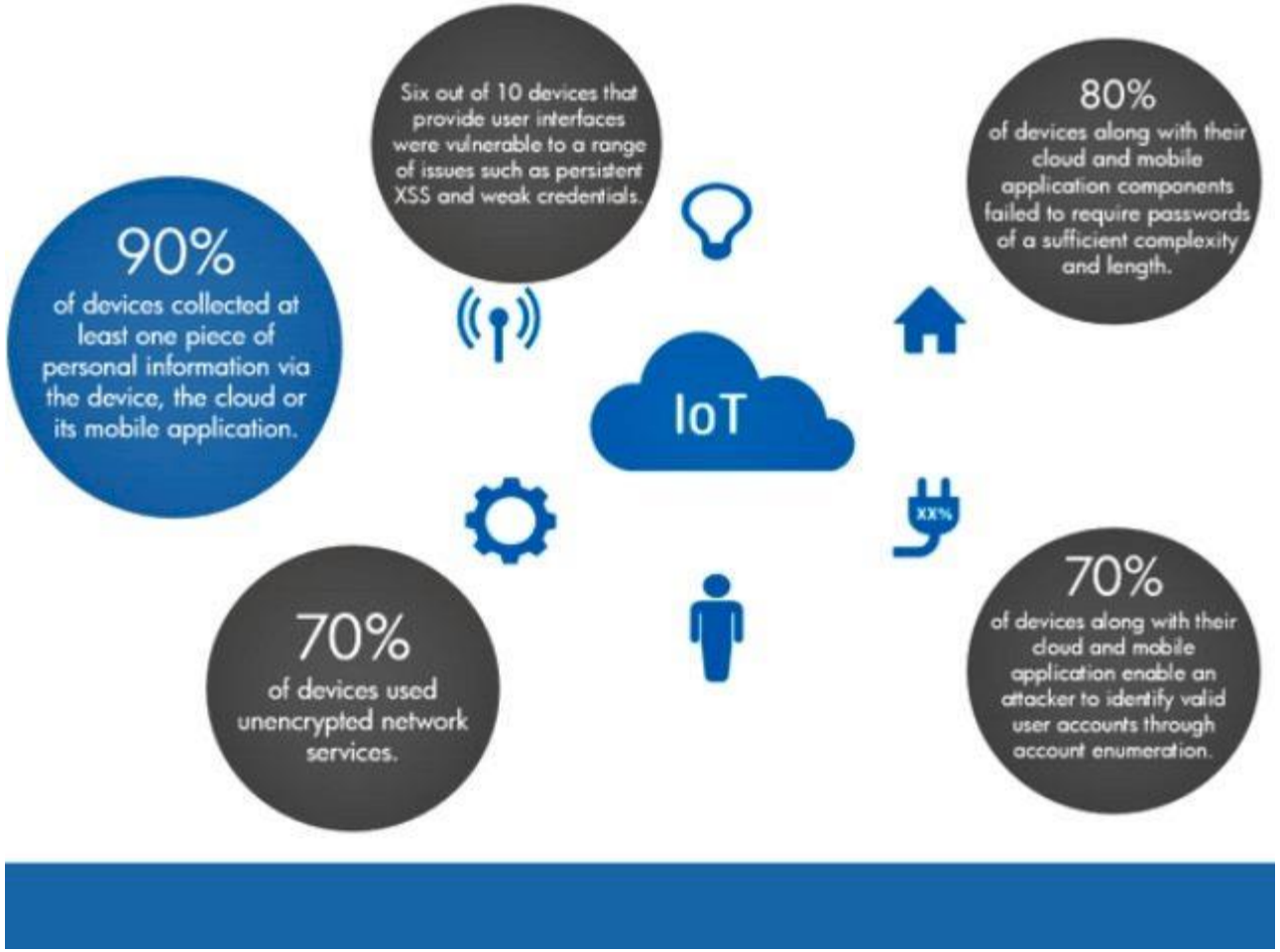
IOT Eye Chart



IOT Opportunities



IOT Security (CMSWire.com)

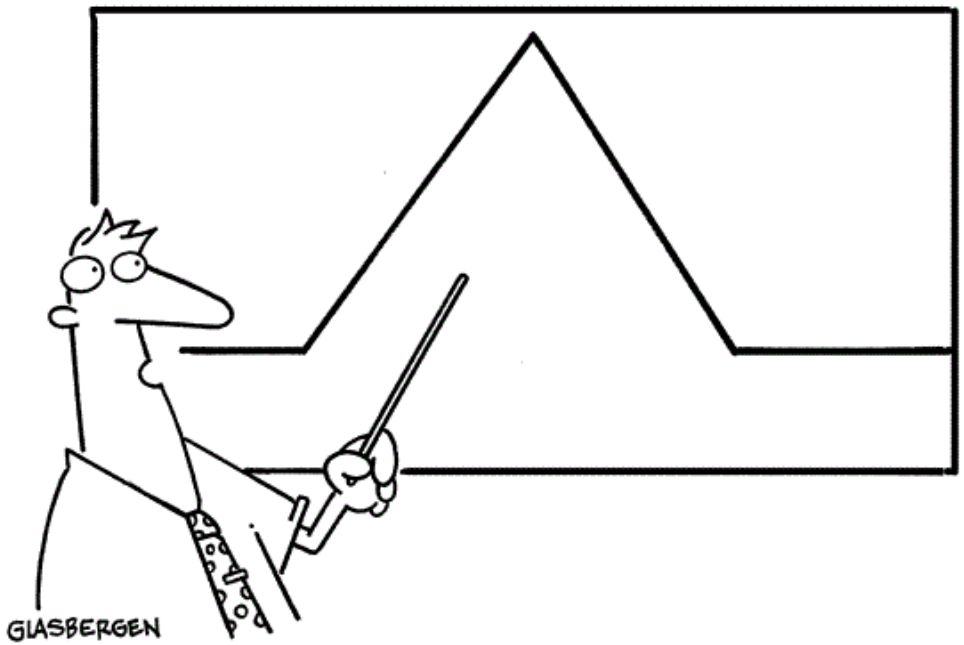


IOT Security (CMSWire.com)

- IOT applications fall into three basic categories:
  - Mobile or desktop applications that control IOT devices;
  - IOT firmware and embedded applications;
  - Applications on open IOT platforms (for example, apps built for Apple Watch).
- All of these applications need to be protected or you run the risk of undesirable outcomes such as:
  - Improper or unsafe operation of IOT devices;
  - Theft of confidential data, private user information or application-related intellectual property;
  - Fraud and unauthorized access to payment processing channels;
  - Damage to your brand image and deterioration of customer, prospect and partner trust.

Questions and Answers

"There are no stupid questions, so let's also agree there are no stupid answers."



"When preparation and opportunity collide, it causes a seismic upheaval and that's how mountains of money are made!"

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