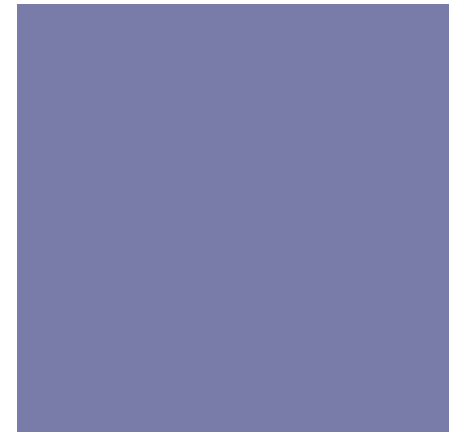# Dr. Alex Lawrence

Assistant Professor, Weber State University

Technology and Entrepreneurship
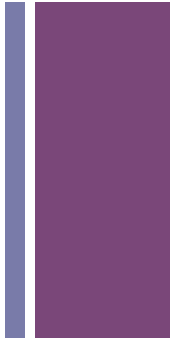
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Tech Trends For 2017

Alex Lawrence, Ph.D.

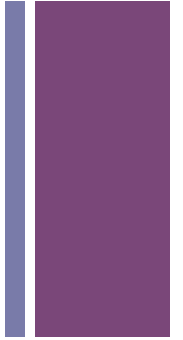@_AlexLawrence (Twitter)

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DEFINITION OF A TECH TREND

- Potential for significant impact on organizations within next three years

- High potential for disruption to businesses, end users and IT

- Need for major investment

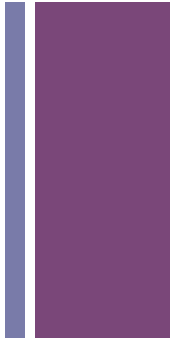- Risk of being late to adopt

- Decisions required in next two years

THREE THEMES TODAY

- Merging of real & virtual worlds

- Intelligence everywhere
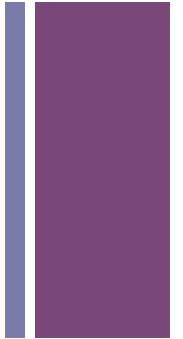
- Technology impact of digital business shift

INTERNET OF THINGS

- Data streams and services created by digitizing everything.

- Connectivity to hardware via consumer devices exploding.

- Enterprise level controls are talked about less, but efficiencies are massive.
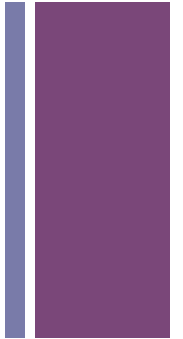
INTERNET OF THINGS

- Apps can control entire home

- What used to cost ~$100K now costs ~ $2K

- Enterprise level controls are talked about less, but efficiencies are massive.
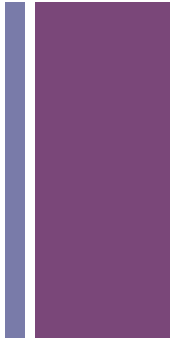
INTERNET OF THINGS

- Popular devices
  - Amazon Echo
  - Nest
  - Ring
  - Smart plugs to connect anything
  - All from your cell phone
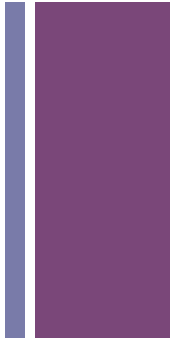 - Startups everywhere in these spaces

3D PRINTING

- 3D printer shipments double in 2015, doubled again in 2016.

- Market for inexpensive devices growing rapidly.

- New industrial, biomedical and consumer applications.

- Improving design, prototyping and short-run manufacturing.
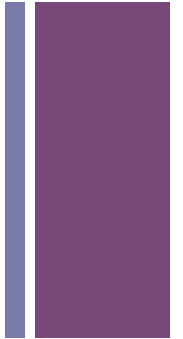
- WhiteClouds and dozens nationally

COMPUTING EVERYWHERE

- Increased emphasis on serving needs of mobile users in diverse contexts and environments (not just devices alone).

- Phone and wearables most immediate expansion of computing environment.

- Will continue to raise significant management challenges for IT within organizations as they lose control of user endpoint devices.

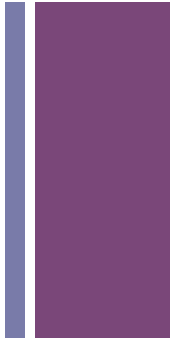- Require increased attention to user experience design.

SMART MACHINES (AI)

- Deep analytics applied to understanding of context to create world of smart machines.

- Combine these with advanced algorithms allow systems to understand environment and learn for themselves and act autonomously.

- Vehicles, advanced robots, virtual personal assistants and smart advisors exist and will evolve rapidly.

- New age of machine helpers.

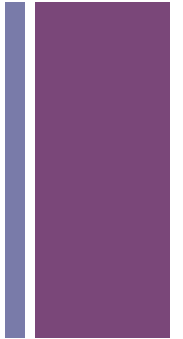- Likely the most disruptive era in the history of IT.

SMART MACHINES (AI)

- $5B+ Venture Capital invested in 2016 in AI related startups

- Learning on the go for basic conversational consumer needs

- Language learning a big opportunity in mobile app space (real time language translation)

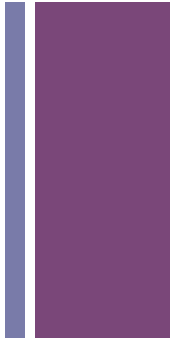- Still a long ways to go before SkyNet ☺

ANALYTICS

- Volume of data generated by all of these systems increases the vast pools of structured and unstructured data inside and outside of the enterprise.

- Need to be analyzed – talent + technology

- How do you filter the huge amounts of data coming from IoT, Social Media, Wearable Devices – and then deliver exactly the right information, to the right person, at the right time?

- DOMO, Grow (local) and dozens in Silicon Valley and beyond funded to showcase data
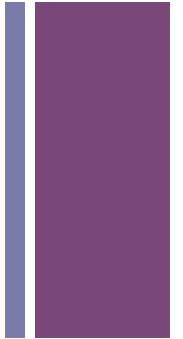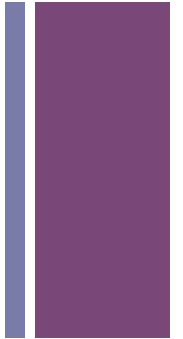
CLOUD COMPUTING

- "The cloud is just someone else's computer"

- Growth of mobile computing requires centrally coordinated applications that can be delivered to any device.

- Network and bandwidth costs favor apps that use the intelligence and storage of the client device, coordination and management based in the cloud.

- Second screen is becoming first screen flipping television viewing and a mobile device.

- Wi-Fi network startups like Eero, Plume and Google Home (not a startup)

WEB-SCALE IT

- Global-class computing that delivers capabilities of large cloud service providers to all sizes of organizations.

- More startups start out thinking, acting and building applications and infrastructure like Amazon, Google and Facebook.

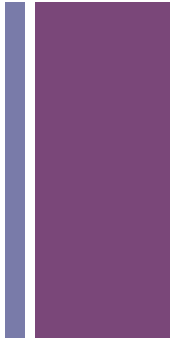- Web-scale IT does not happen immediately.

SOFTWARE DEFINED APPS AND INFRASTUCTURE

- Flexibility required to make digital business work.

- Software-defined networking, storage, data centers and security are maturing rapidly.

- No need for startups to spend significant time and money on hosting. Buy as-needed.

- Amazon likely to spin-off AWS into a separate, multi-billion dollar public company.
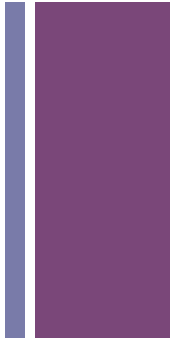
SECURITY AND SELF-PROTECTION

- All roads to digital future lead through security.

- Security cannot be a roadblock that stops progress.

- Not possible to provide 100% secure environment.

- Perimeters and firewalls no longer enough.

- Every app needs to be self-aware and self-protecting.

- Startups in security related consulting, software and hardware are growing rapidly
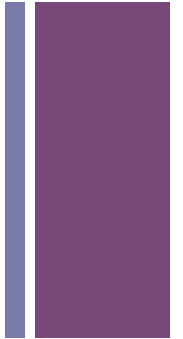
STARTUP COMMUNITIES

- Northern Utah seeing sustainable startup growth

- Lack of venture capital makes Iomega type companies more elusive

- Culture supports startups that provide great life/ community, less moonshots

- Not a bad thing – just different

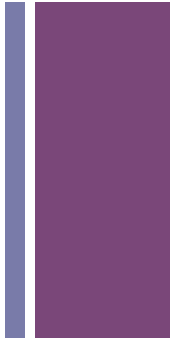- Already love Ogden or new to it; little startup migration from the south

STARTUP COMMUNITIES

- More solid "doubles" for exits in 2017-2018

- More venture capital flowing to Ogden/Weber in 2017-2018

- Silicon Slopes stopping at Farmington

- Next IPO level success will be homegrown, not a transplant

FINAL THOUGHTS

- Unlimited opportunity but rapidly growing amount of noise

- Everyone has an app idea; outside of uniqueness, differentiation will be ability to market online

- Hard to take technical risk in risk averse environment. Try anyway ☺

- Hardware tech just as exciting as software in 2017

- Investment, startup environment and technology innovation in 2017 will be more rapid than ever before!