

# **Future of Higher Education**

## **Our Response to Disruption**

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Educause Annual 2018, Oct 31

Jim Phelps

Director of Enterprise Architecture and Strategy

#EDU18, @jimphelps



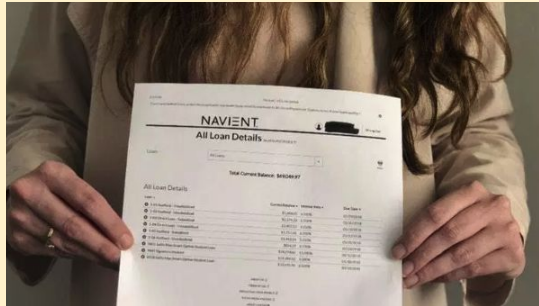
## Shifting Skills



## Digital Transformation



## Employment and Income Challenges



## H.E. Financial Crisis

INTERACTIVE RESTRUCTURING MAP OF THE NEW UW SYSTEM



# Learning Outcomes:

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**Understand** the impact of the drivers on HE.

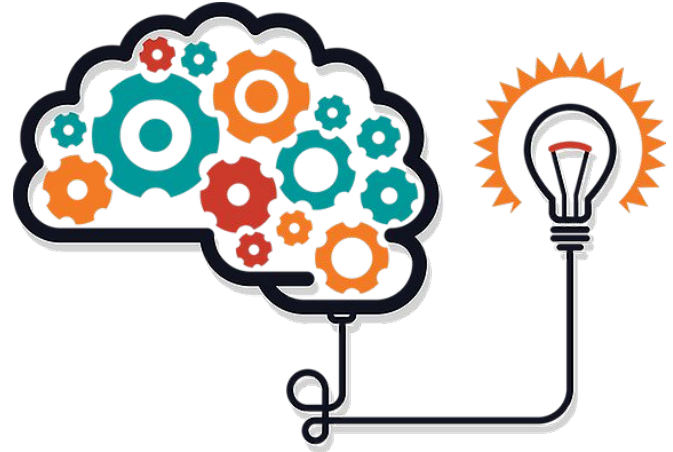
**Explain** Digital Transformation and our current place between Disruption and Transformation and why that is important.

**Understand and explain** my vision for a future higher ed institution.

**Assess** the impact of the drivers on your institution.

**Compare** your current state against the future state.

**Construct** a response plan based on the responses identified.



# Future of Higher Education: Summary of Drivers and Responses

Digital Transformation (DX)	Shifting Skills	Employment & Income Challenges	Higher Ed Financial Crisis
<i>Drivers (DX)</i> <ul style="list-style-type: none"> <li>• New technologies that impact all aspects of society</li> <li>• Unknown "winners and losers"</li> </ul>	<i>Drivers (Workforce)</i> <ul style="list-style-type: none"> <li>• New classes of jobs, skills, and competencies</li> <li>• Shifting emphasis on "above the line" competencies</li> </ul>	<i>Drivers</i> <ul style="list-style-type: none"> <li>• Increasing numbers of existing jobs displaced</li> <li>• Rising tuition, while many students &amp; households are financially challenged</li> </ul>	<i>Drivers</i> <ul style="list-style-type: none"> <li>• Growing number of institutions closing or merging</li> <li>• Many institutions likely to enter bankruptcy</li> </ul>

<i>Suggested Responses</i> <ul style="list-style-type: none"> <li>• Build adaptability into your organization.</li> <li>• Educate leadership and campus about the DX Story</li> <li>• Create a futurology practice</li> <li>• Build a DX Change Management Office or Practice to engage all of campus in the DX change</li> <li>• Develop pedagogy and content for to help students understand the DX</li> </ul>	<i>Suggested Responses</i> <ul style="list-style-type: none"> <li>• Create a strategic investment fund for reskilling our workforce</li> <li>• Build a Strategic Workforce Development Center that focuses on continuous development</li> <li>• Create a continuous learning and improvement culture among all staff</li> <li>• Actively manage Human Resource debt</li> </ul>
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## Future Higher Education Institution

Data Driven Foremost	Digital Experience is Central	Automation for student experience	Lifelong learners, working learners are common
<ul style="list-style-type: none"> <li>• Need to automate to drive efficiencies</li> <li>• Measure effectiveness of experience</li> <li>• Measure outcomes</li> <li>• Drive hyper-personalization</li> </ul>	<ul style="list-style-type: none"> <li>• Multiple experience designs support diverse learners</li> <li>• Hyper-personalization is the norm</li> </ul>	<ul style="list-style-type: none"> <li>• Automation matches students to courses, peer groups, co-curricular activities, advisors and mentors, supporting services like transportation, food, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Multimodal education supports lifelong learners, when and where they learn</li> <li>• Multiple graceful entry/exit points deliver learning achievements from microcredentials to degrees</li> </ul>
Automate Everything	Workforce Development is strategic	Innovation and Reinvention are core	Mergers and Partnerships extend the experience
<ul style="list-style-type: none"> <li>• Match researchers to grants &amp; pre-populate applications</li> <li>• Match student applicants with best fit and experience</li> <li>• Drive efficiencies in facilities and administrative tasks</li> </ul>	<ul style="list-style-type: none"> <li>• Constant workforce development focused on reskilling and realigning roles</li> <li>• Matrixed organization is focused on the digital experience</li> </ul>	<ul style="list-style-type: none"> <li>• Constant feedback and measure drives innovation and reinvention of the experience and drives efficiency</li> <li>• New technologies and changes in society require innovation and reinvention to be core to the culture</li> </ul>	<ul style="list-style-type: none"> <li>• Learners can attend a partner campus close to work/home</li> <li>• 3rd party partners extend the experience to transport, housing, food, etc.</li> </ul>



# 3 Personas



Leo Legacy



Rita Registrar



Betty Business Analyst

# Leo Legacy



Started working in University IT as a student on the Help Desk. Worked his way up to a lead on the Student System Team. Has been at the University for 25 years.

He knows his system inside and out and loves getting into the code to solve problems for his business partners. They love Leo and think of him as “their” person.

He has at least 20 years to go until he retires.

# Rita Registrar

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Rita is the Registrar. She was brought in to shake up a group that had become intransigent and siloed. **Rita has vendors contacting her daily with “solutions”** to almost all of her challenges.

Rita is worried about changing regulations and meeting students new expectations for great customer service. She isn't sure how to make student data available to all the people on campus who ask for it though she is willing to support the data driven future.

She wonders which vendor(s) would help her the most, the fastest and at the lowest cost.

# Beatrice Business Analyst

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Betty is a business analyst working on HR and Payroll. Betty is extremely good at gathering requirements, defining the business processes, then defining the data structures needed to support those processes.

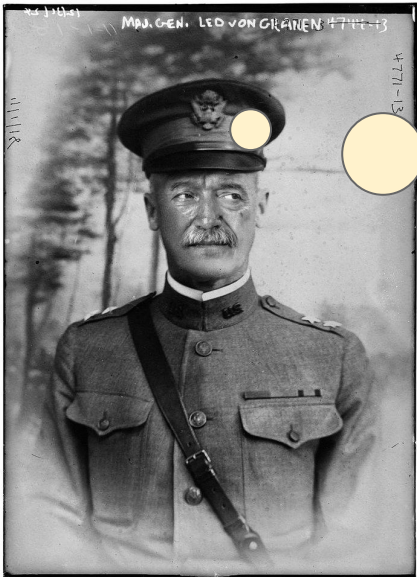
Betty writes excellent user stories that then become test standards. She is highly valued and everyone wants Betty on their project.



# Software As A Service Solution



# SaaS Story



by:the library of congress

Leo von Granen

14 october 2018

Will I still have a job?  
What will I have to do to fit into this  
new world?  
The SaaS is nowhere near as good  
as a system that I would write!  
It doesn't do (a), (b) and (c)!



# SaaS Story

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This is a pretty cool looking product.  
This would really make my students  
life much easier.

The vendor says that **I won't need  
help from central IT.** I wonder what  
it would take to stand this up for my  
students?

**Will the Provost pay for it?**

# Impact of the Changing Technology



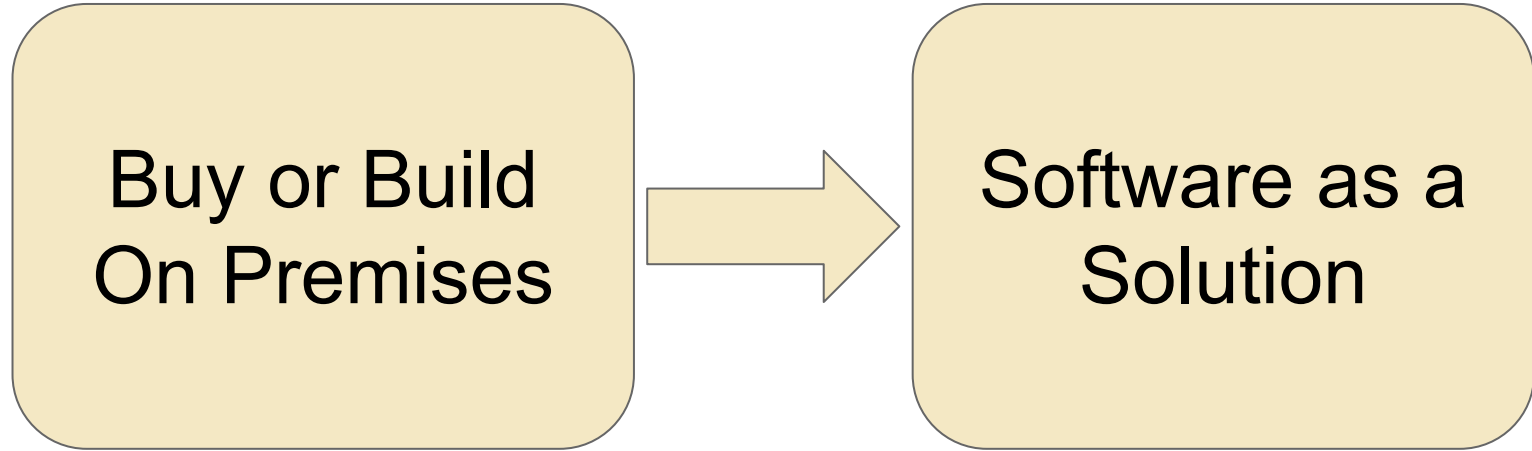
I spend my time **asking the vendor for help** and feature requests, all while trying to learn the system and **how to configure it.**

Then I have to **tell the business** what can and can't be done.

I used to gather requirements and then work on implementation, **now I'm managing relationships and negotiations and trying to triangulate a solution.**

# 1 small disruption

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# Impact of Changing to SaaS

## Navigate the Change



by: the library of congress

Leo von Granen



# Impact of Changing to SaaS

## Navigate the Change



by:the library of congress

Leo von Granen

## Shifting Expectations and Relationships





# Impact of Changing to SaaS

## Navigate the Change



by: the library of congress

Leo von Granen

## Shifting Expectations and Relationships



## New skills for the same work





# Driver: Shifting Skills

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# Impact of the Changing Technology

## Navigate the Change



by: the library of congress

Leo von Granen

## Shifting Expectations and Relationships



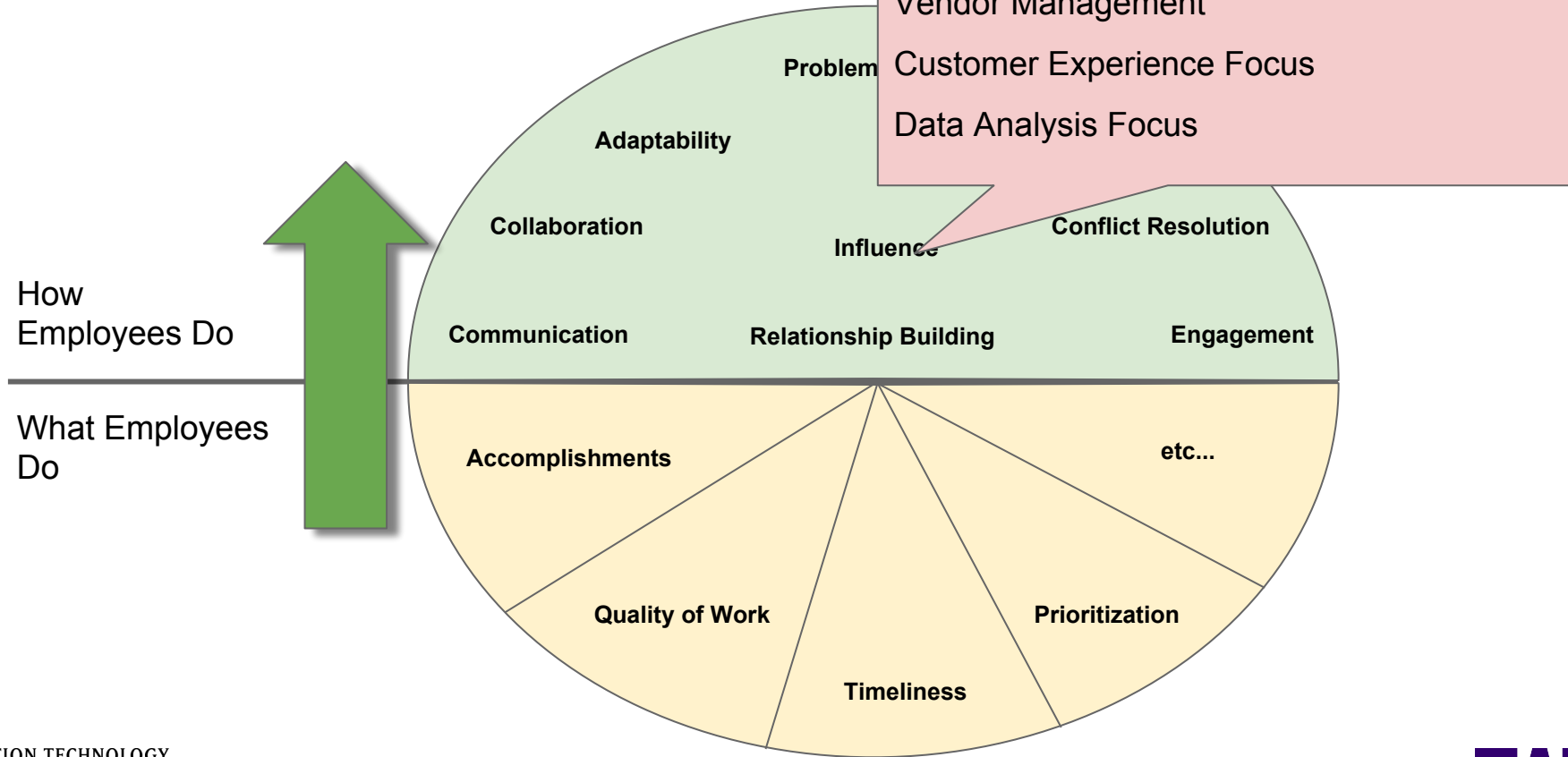
## New skills for the same work



## Scott Lever - Gartner Analyst

“Nearly **80% of CIO's and IT leaders** project that the skill and knowledge their organization will need in **10 years** have **little resemblance to the skills and knowledge** they have today.”

# The Workforce of the Future



- Create a **strategic investment fund** for reskilling our workforce
- Build a **Strategic Workforce Development Center** that focuses on continuous development and alignment (including Job Descriptions)
- Create a **continuous learning and improvement** culture among all staff
- Actively manage **Human Resource debt**.

# **Driver: Digital Transformation**

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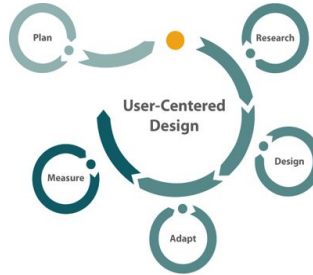


**Digital transformation** is the change associated with the application of **digital** technologies to all aspects of human society.

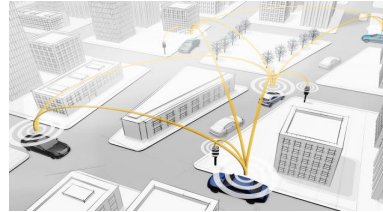
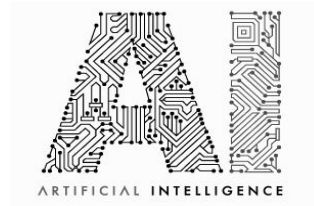
# Digital Transformation



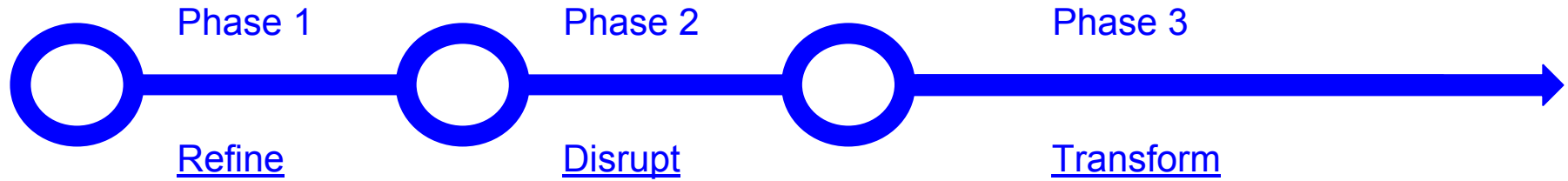
Customer Experience  
Design



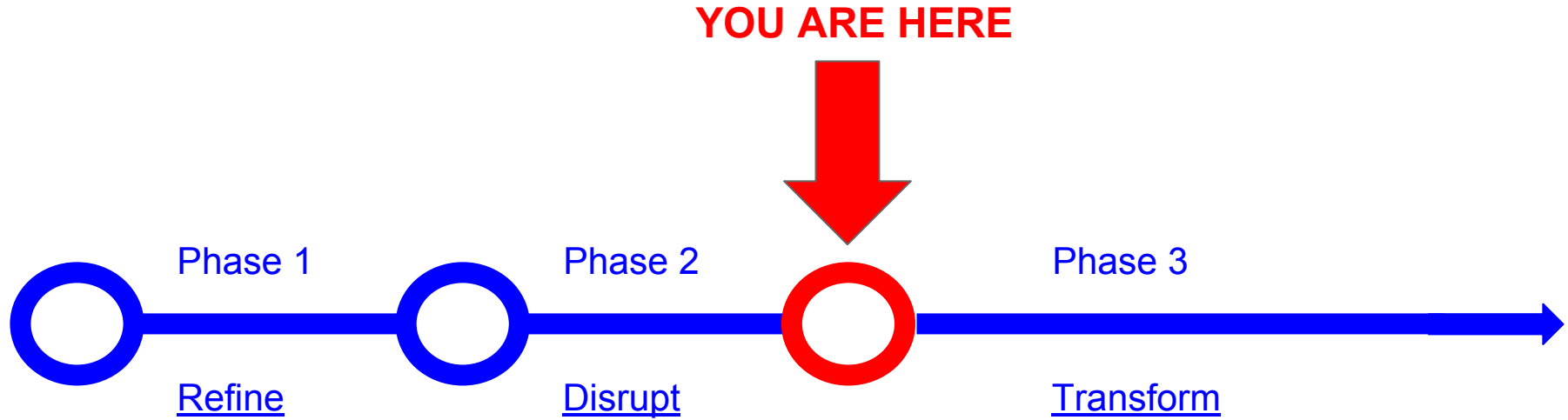
Hyper-Personalization



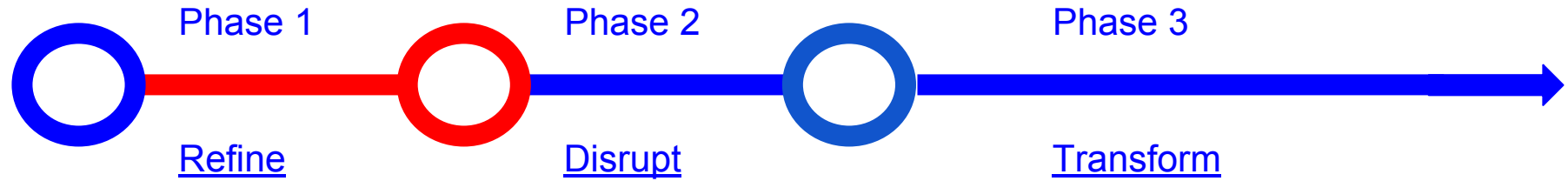
# Phases of Transformations



# Digital Transformation



# Digital Transformation



# Replacing old with new

By the Harvard Innovation Lab



**INFORMATION TECHNOLOGY**

UNIVERSITY of WASHINGTON

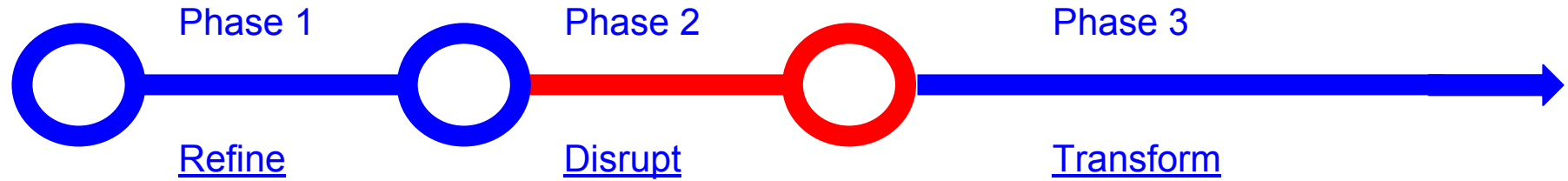
Enterprise Architecture & Strategy


From: EDUCAUSE 2017 Annual Conference Panel on the Future of IT Workforce






# Digital Transformation





All ▾




Departments ▾


Your Amazon.com

Today's Deals

Gift Cards

EN 

Hello, Sign in  
Account & Lists ▾



echo dot

Buy 2 save \$10

Limited-time offer

Etsy


Search for items or shops

Search

Sell on Etsy

Register

Sign in



Jewelry & Accessories

Clothing & Shoes

Home & Living

Wedding & Party

Toys & Entertainment

Art & Collectibles


Craft Supplies & Tools

Vintage

WOMEN'S HISTORY MONTH

Women make our community great.

See how >



Check out mood-boosting jewelry >

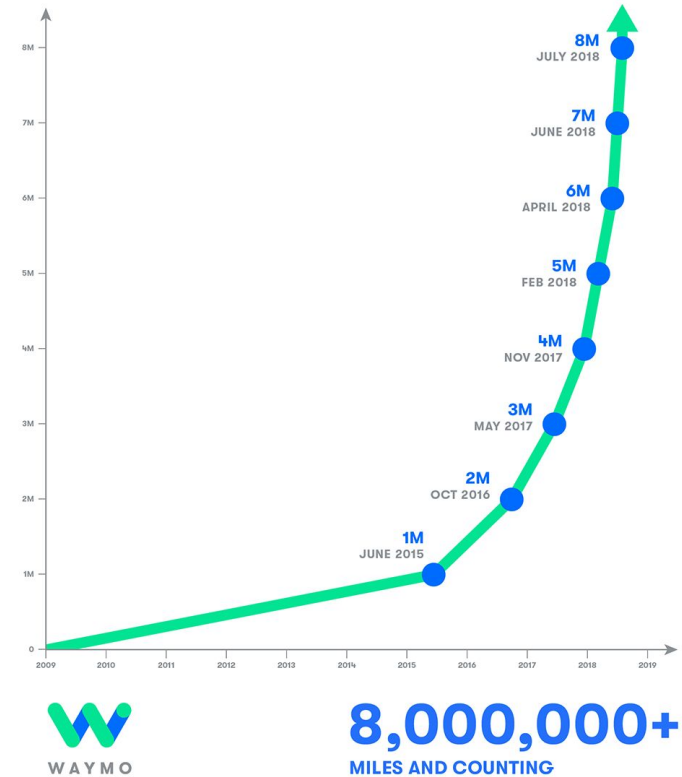
Shop leather with personalized letters >

# Waymo's self-driving cars are racking up miles faster than ever

Sean O'Kane

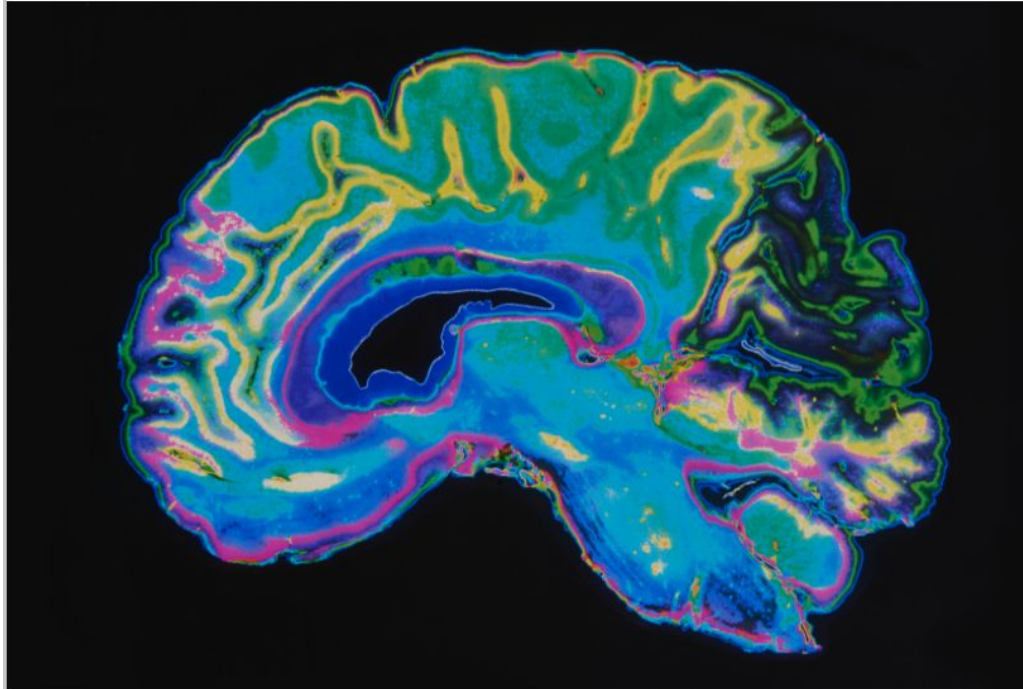


Photo by Sean O'Kane / The Verge



The Verge, May 10, 2017

## IBM's AI can predict schizophrenia by looking at the brain's blood flow



Highwaystarz-Photography via Getty Images

Nature Partner Journal - Schizophrenia [www.nature.com/npjschz](http://www.nature.com/npjschz)

# The Apple Watch can accurately detect hypertension and sleep apnea, a new study suggests

Posted Nov 13, 2017 by Sarah Buhr (@sarahbuhr)

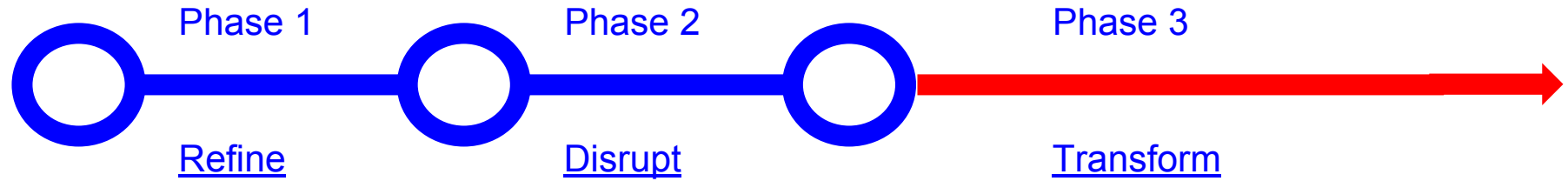


Cardiogram and UCSF previously demonstrated the ability for the Apple Watch to detect abnormal heart rhythm with a 97 percent accuracy.

.... can detect sleep apnea with a 90 percent accuracy and hypertension with an 82 percent accuracy.

Techcrunch, Nov 13, 2017

# Digital Transformation







Founded May 1935

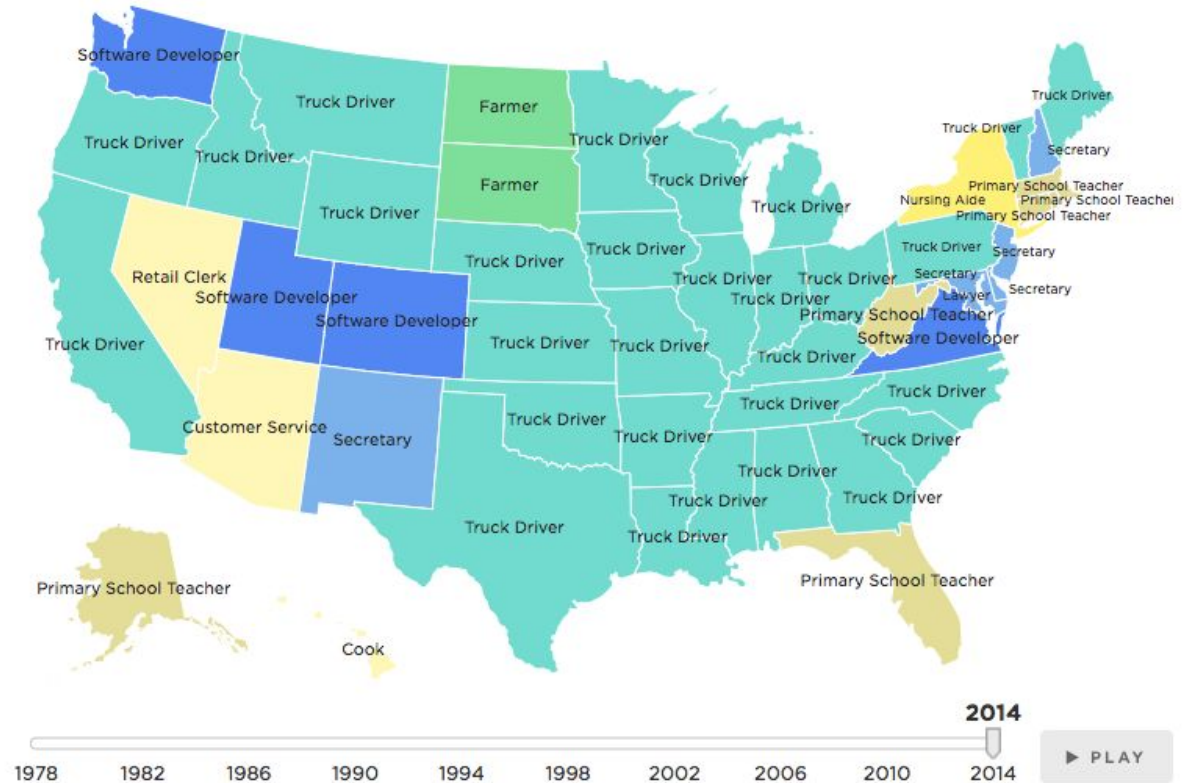


# Washing Machines + Refrigeration = Women's Vote



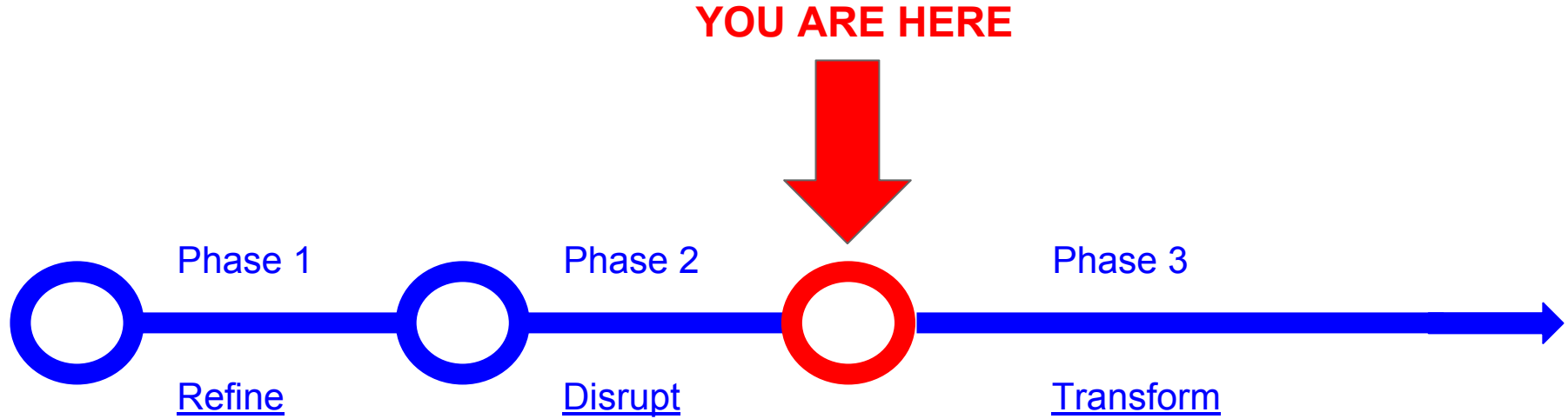
## The Most Common\* Job In Each State 1978-2014

# Truck Driver



NPR's Planet Money, Feb 5, 2015

# Digital Transformation



- **Build adaptability** in every aspect of your organization.
- Create a “**Futurology**” practice or program to do scenario planning, “what-if” sessions, workforce planning, SWOT, etc.
- Actively manage the **health of organization** as disruption rolls through families and towns.

# Driver: Income Challenges

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## Prediction 1: World Economic Forum and Boston Consulting

### A grim future for workers who don't learn new skills

Almost 1 million Americans will see their career change or vanish entirely by 2026, according to a report from Boston Consulting. This interactive visu

“Almost 1 million Americans will see their occupations vanish entirely by 2026”

**The bottom line:** In all, some 1.4 million jobs will disappear over the next 10 years, including 70 percent of them — 41% — will have either minuscule or no chance of finding other work.

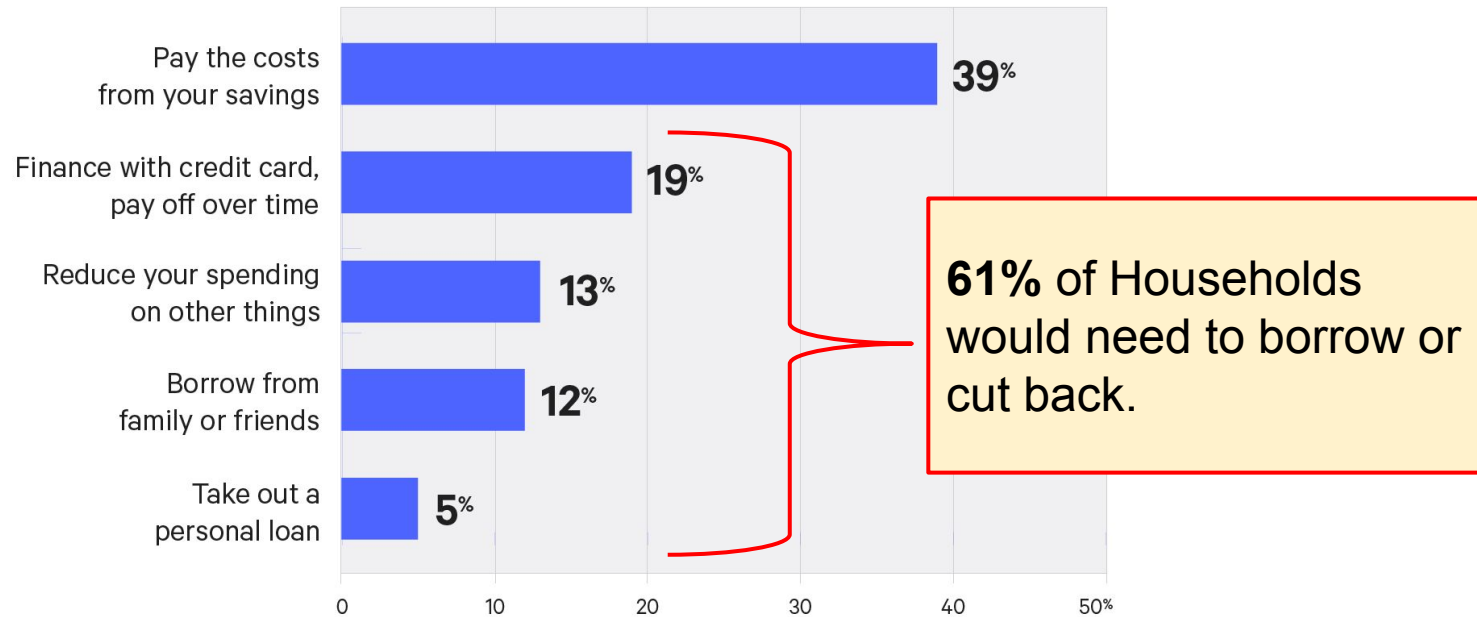
“Without new skills...41% will have minuscule or no chance of finding other work”

Axios: A grim future for workers who don't learn new skills

<https://www.axios.com/workers-automation-lost-jobs-skills-2d944533-3f51-40ee-b2c0-b65e4644a9db.html>

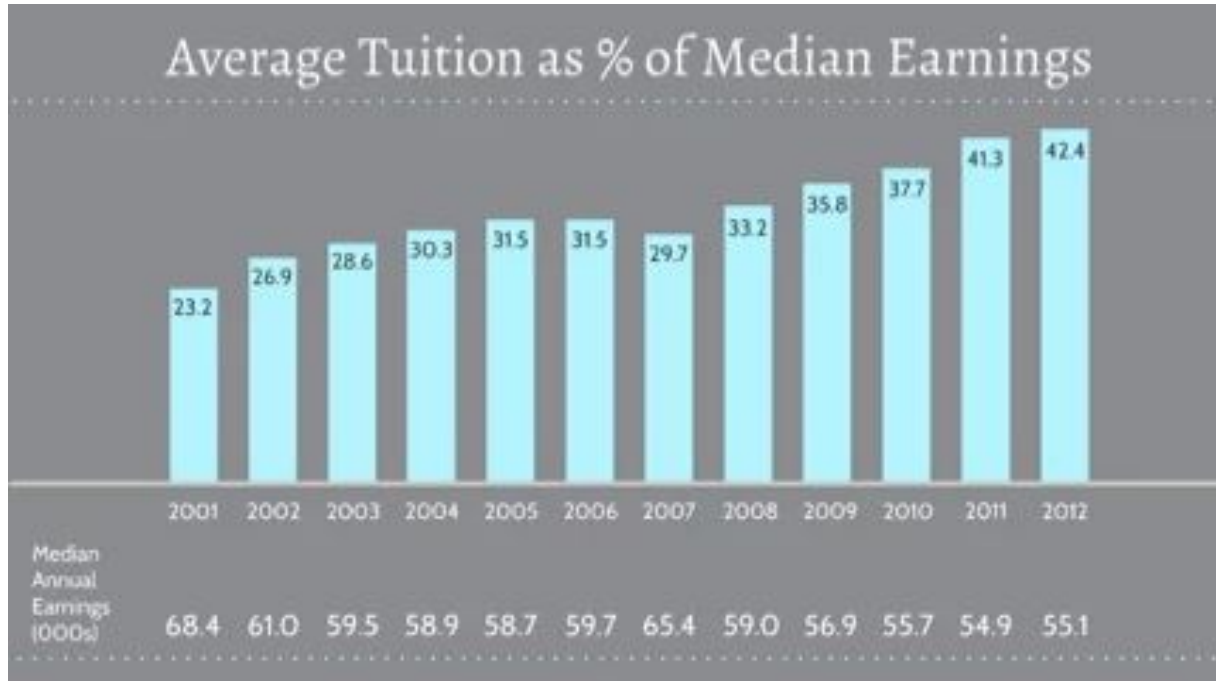
# How Americans pay for unexpected expenses

How would you deal with a major unexpected expense, such as \$1,000 for an emergency room visit or car repair?





# Tuition is eating up more of earnings

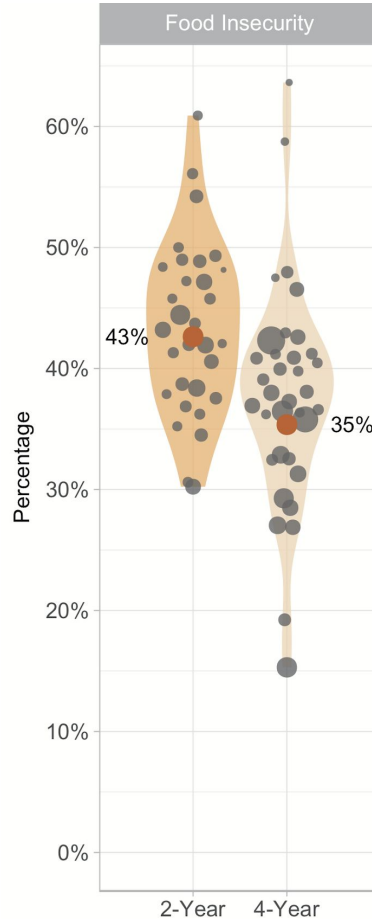


# Students are Homeless and Hungry

## Nationally:

35% of university students were food insecure in the 30 days preceding the survey.... for community college students is 42%

[Wisconsin Hope Lab](#)



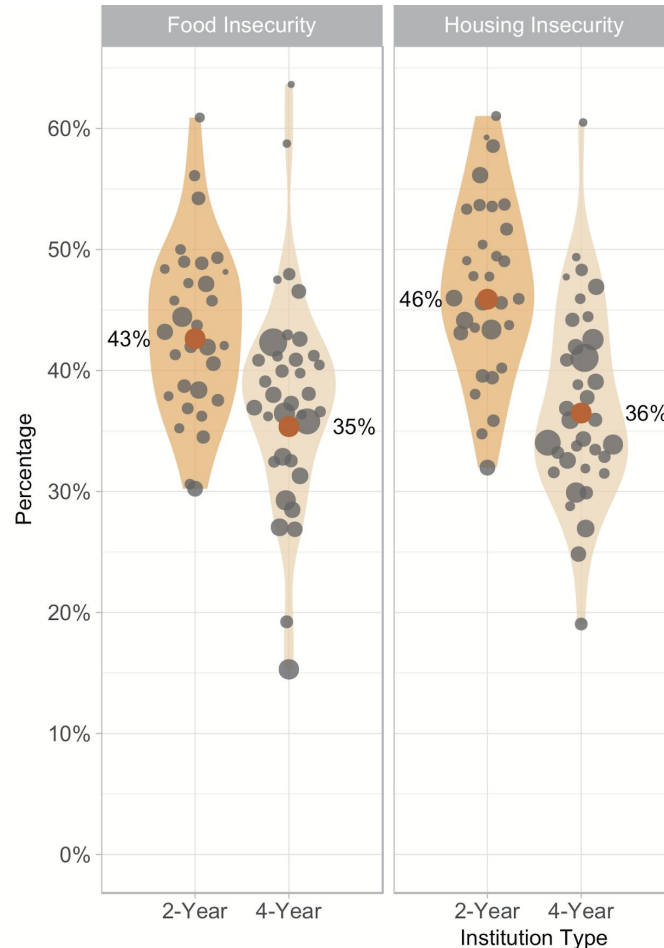
# Students are Homeless and Hungry

## Nationally:

36% of university students were food insecure in the 30 days preceding the survey.... for community college students is 42%

36% of university students were housing insecure in the last year. Housing insecurity affected 51% of community college students....

[Wisconsin Hope Lab](#)



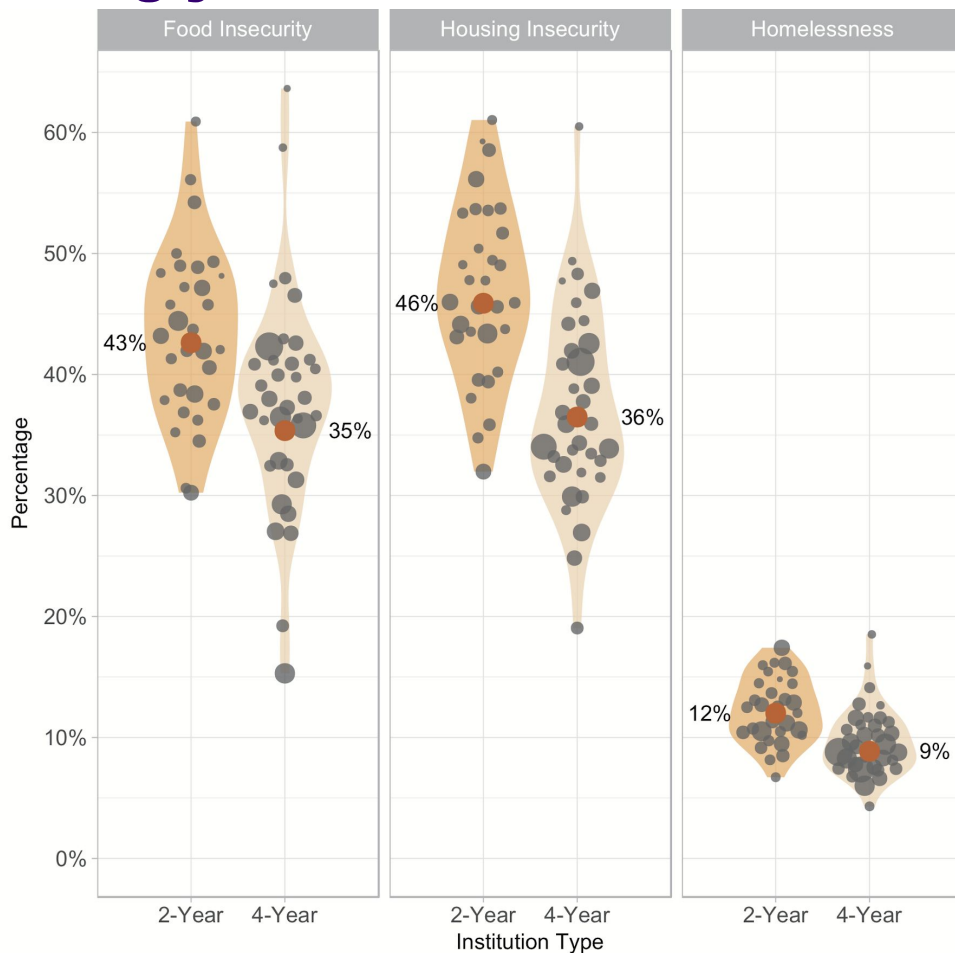
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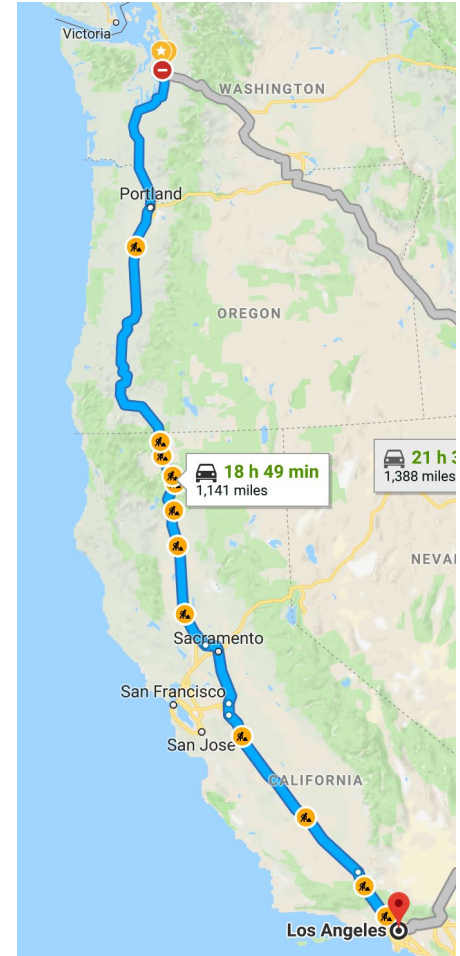
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[Wisconsin Hope Lab](#)



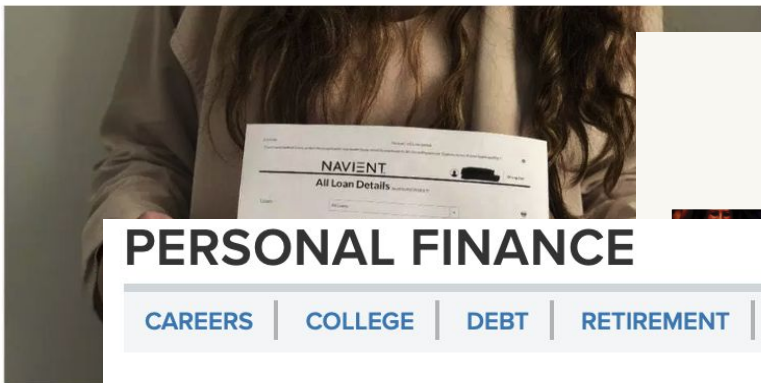
# Student Loan Debt

(\$1,530,400,000,000)



# Student Loan Debt

**Student debt crisis watch: pay \$18,000 of your \$24,000 loan,  
owe \$24,000**



ZERO DEGREE CLIMATE  
**Apple, IBM, and Google  
don't care anymore if you  
went to college**

By Corinne Purtill • August 23, 2018

## PERSONAL FINANCE

CAREERS

COLLEGE

DEBT

RETIREMENT

SAVINGS

TAX PLANNING

**For some, student loan debt is  
doubling, tripling, and even  
quadrupling**

- For some students, what they borrow can end up being a fraction of what they wind up owing.



**Challenges the assumption  
that students will be able  
(or willing)  
to leave the workforce  
for 4 to 6 years to get an education.**



- Create more **graceful entry and exit** points for students
- Leverage **DX technologies** to make sure the student receives the best, most efficient experience
- Drive down administrative costs through **automation**, autonomous systems, etc.
- Look for **partnerships** to offset student tuition

# **Driver: HE Financial Crisis**

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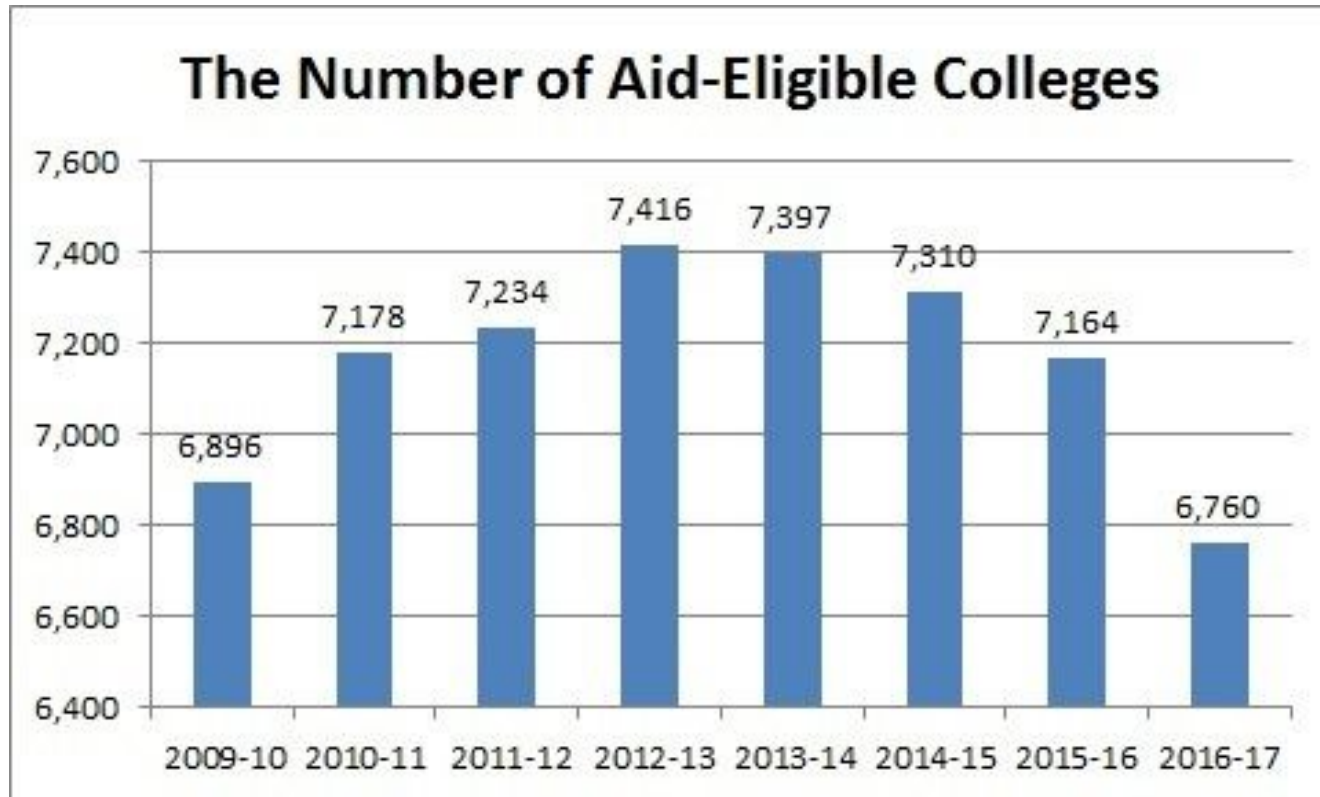


# Harvard Business School professor: Half of American colleges will be bankrupt in 10 to 15 years

Abigail Hess | @AbigailJHess • 9:57 AM ET Wed, 15 Nov 2017

There are [over 4,000](#) colleges and universities in the United States, but Harvard Business School professor [Clayton Christensen](#) says that [half are bound for bankruptcy](#) in the next few decades.





[Inside Higher Ed: Numbers of Colleges and Universities Drops Sharply Amid Economic Turmoil](#)

# Mergers in Higher Education

## List of university and college mergers in the United States

From Wikipedia, the free encyclopedia

This is a **list of mergers of universities and/or colleges in the United States** with the name of the surviving institution, predecessors, and effective date.

*This list is incomplete; you can help by expanding it.*

**Contents** [hide]

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E through K

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6

See also

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References

### A through D [ edit ]

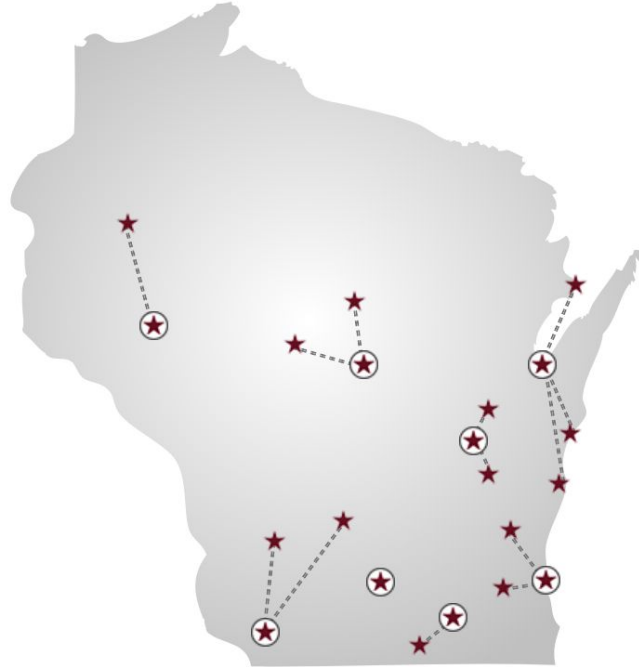
- Alderson Broadus University - merger of **Alderson Academy** and **Broadus Institute**, 1932
- Alliant International University - merger of *California School of Professional Psychology* and United States International University, 2001
- American Sentinel University - merger of **American College of Computer & Information Sciences** and **American Graduate School of Management**
- Argosy University - merger of American Schools of Professional Psychology, the University of Sarasota and the Medical Institute of Minnesota, 2001
- Azusa Pacific College - absorbed *Arlington College*, 1968
- Azusa Pacific College - merger of Azusa College and Los Angeles Pacific College, 1965
- University of Baltimore - absorbed Eastern College, 1970
- Benedictine College - merger of Mount Saint Scholastica College and St. Benedict's College - 1971
- Big Sandy Community and Technical College - merger of Prestonsburg Community College and Mayo Technical College.
- Birmingham–Southern College - merger of Southern University (Alabama) and Birmingham College in 1918.
- Boston University School of Medicine - absorbed Boston Female Medical School, 1874
- Boston University - merger of Boston University School of Education and Wheelock College of Education and Human Development, 2017
- Brevard College - merger of Brevard Institute, Weaverville College, and Rutherford College, 1934
- University of California, Berkeley - merger of the College of California and the Agricultural, Mining, and Mechanical Arts College, 1853
- Carnegie Mellon University - formed by the merger of *Carnegie Institute of Technology* and the *Mellon Institute of Industrial Research*
- Carson-Newman University - merger of Carson College and Newman College for Women, 1889
- Case Western Reserve University - merger of Case Tech and Western Reserve, 1967
- The Catholic University of America - absorbed *Columbus University*, 1954
- Central Nazarene College - absorbed *Nazarene Bible Institute* (1911)
- Chicago College of Performing Arts - absorbed Roosevelt University School of Music, 1954
- University of Cincinnati - absorbed Medical College of Ohio 1896; Cincinnati Law School, absorbed 1896; Cincinnati College of Pharmacy, 1954; Cincinnati College-Conservatory of Music, absorbed in 1962.
- Cincinnati College-Conservatory of Music - formed by merger of Cincinnati Conservatory of Music and the **College of Music of Cincinnati** in 1955.
- Cincinnati Law School absorbed **Cincinnati College** in the late 1830s.



# Restructuring the University of Wisconsin System

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## INTERACTIVE RESTRUCTURING MAP OF THE NEW UW SYSTEM





ADMINISTRATION



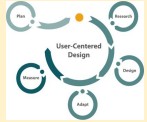
# Mergers Can Benefit All Involved — but They're Never Easy

*By Alina Tugend* | OCTOBER 21, 2018  PREMIUM CONTENT FOR SUBSCRIBERS. **SUBSCRIBE TODAY**

The finances, logistics, and diplomacy are daunting. But if leaders can swallow their pride and work toward compromise, consolidations sometimes make very good sense.

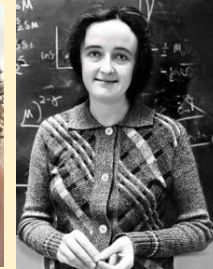
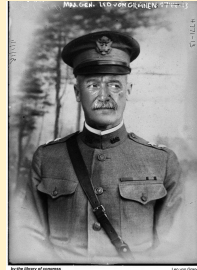
- **Automate everything** possible to drive down costs.
- Look for **merger opportunities** to build footprint, brand and to find efficiencies.
- Find **alternate funding sources** (partnerships) to offset tuition and lost government revenue.
- Eliminate or **collapse departments**.

## Digital Transformation

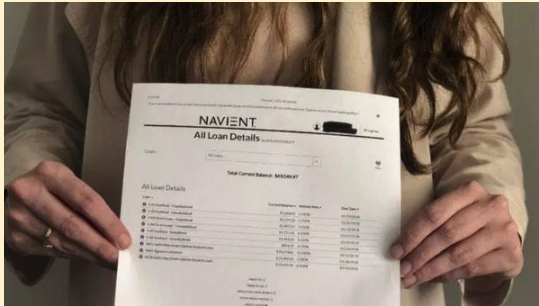


**BIG DATA**

## Shifting Skills



## Employment and Income Challenges



## H.E. Financial Crisis

INTERACTIVE RESTRUCTURING MAP OF THE NEW UW SYSTEM



**INFORMATION TECHNOLOGY**

UNIVERSITY *of* WASHINGTON

Enterprise Architecture & Strategy

# **A Future Higher Education Institution**

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# The University will be a data business first and foremost

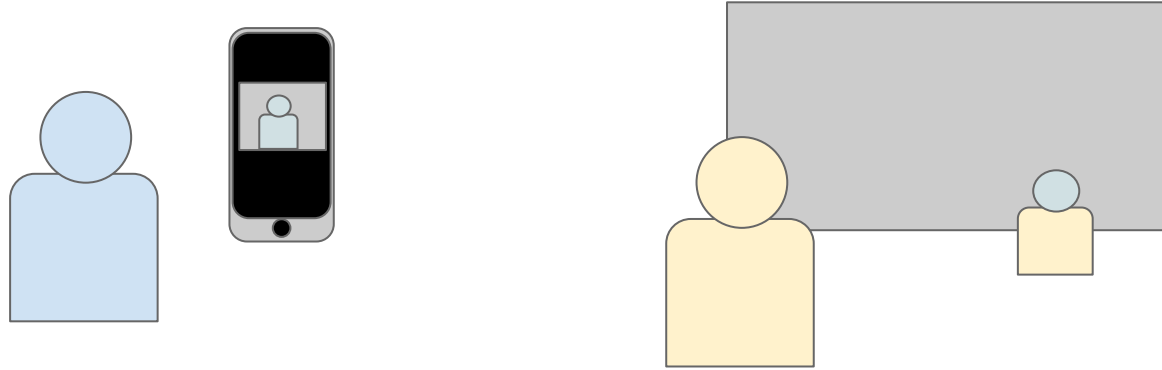
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- > Measure automations - constantly adjust performance
- > Measure experiences - constantly align to new needs
- > Measure outcomes - highlight the best, fix the worst
- > Gain insights, find opportunities.



# The Digital Experience is central

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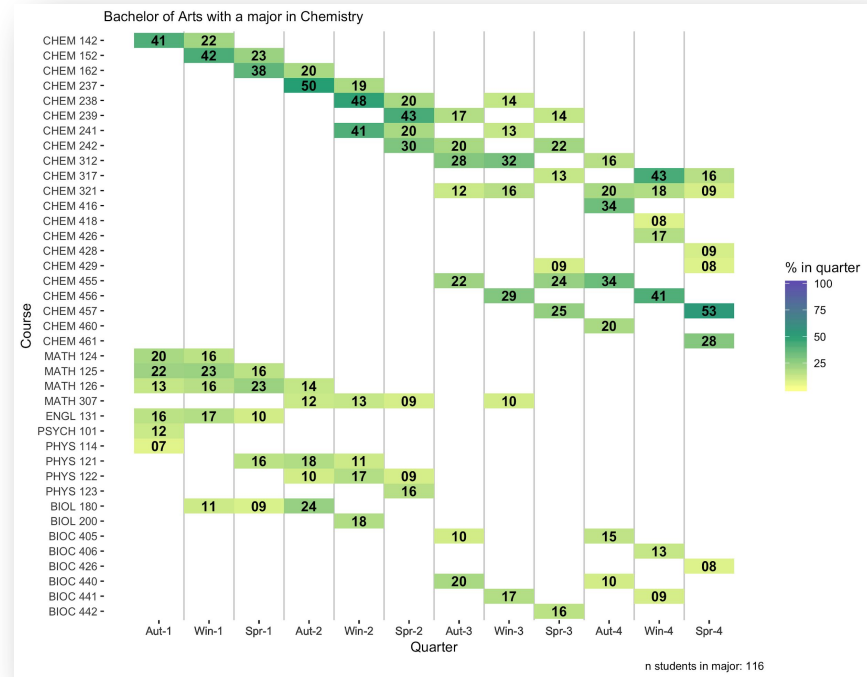


**Multiple “experience designs”**

**Data-driven hyper-personalization**

# Algorithms matching students with:

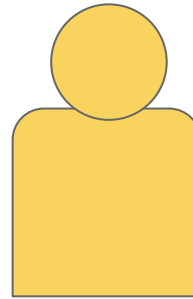
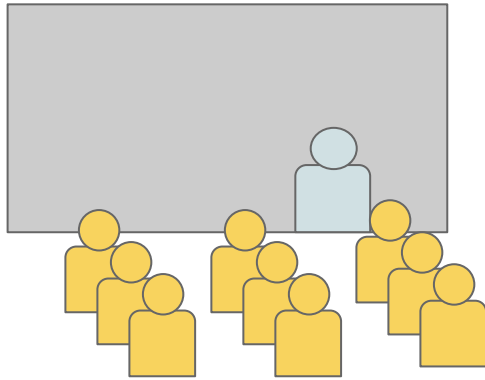
- Courses
- Peer Groups
- Co-curricular Activities
- Advisors and mentors
- Transportation
- Food, etc.





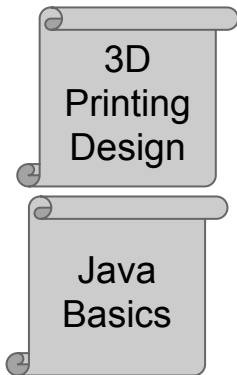
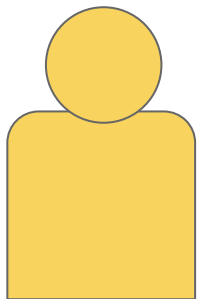
# Multimodal education for lifelong learners

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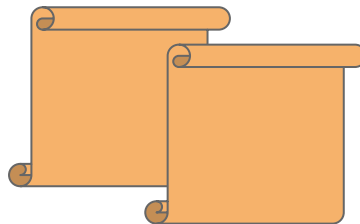
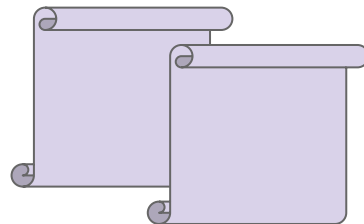
# Multiple Graceful Entry/Exit Points

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**Microcredentials**

**Completed Courses**



**Traditional Degrees**

# Automate Everything

- > Match **Researchers to grants** & pre-populate applications
- > Review **student applications** and prospects and match them with their **best fit and experience**
- > Streamline **Facilities, Maintenance, Administrative** tasks



# Strategic Workforce Development delivering the Digital Experience

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- > Strategic workforce development program will be constantly developing roles & skills across the university.
- > The workforce will adapt/adopt new technologies quickly and effectively.
- > Highly matrixed organization focused on delivering seamless digital experiences.



## **Innovation and Reinvention will be core**

- > Innovation constantly focused on the digital experience, improved efficiency, and broadening the reach of the university.
- > Constant reinvention and innovation will be core to the culture.



## Mergers and Partnerships extend the experience

- > Students can attend partner campuses close to work/home/travel.
- > 3rd party partners help students across their whole experience (tuition, housing, transportation, dining, etc.).



# Learning Outcomes:

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**Understand** the impact of the drivers on HE.

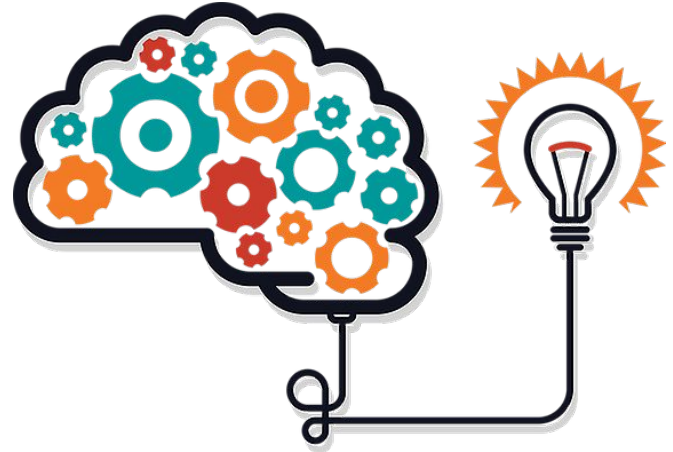
**Explain** Digital Transformation and our current place between Disruption and Transformation and why that is important.

**Understand and explain** my vision for a future higher ed institution.

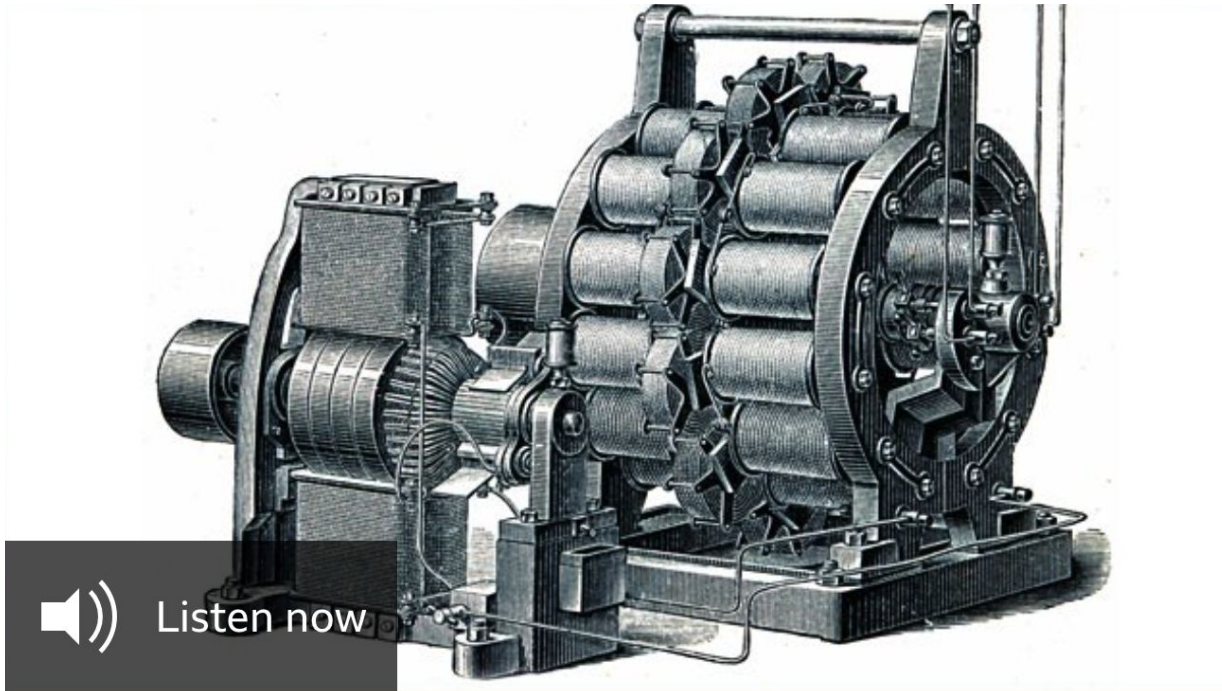
**Assess** the impact of the drivers on your institution.

**Compare** your current state against the future state.

**Construct** a response plan based on the responses identified.







Listen now

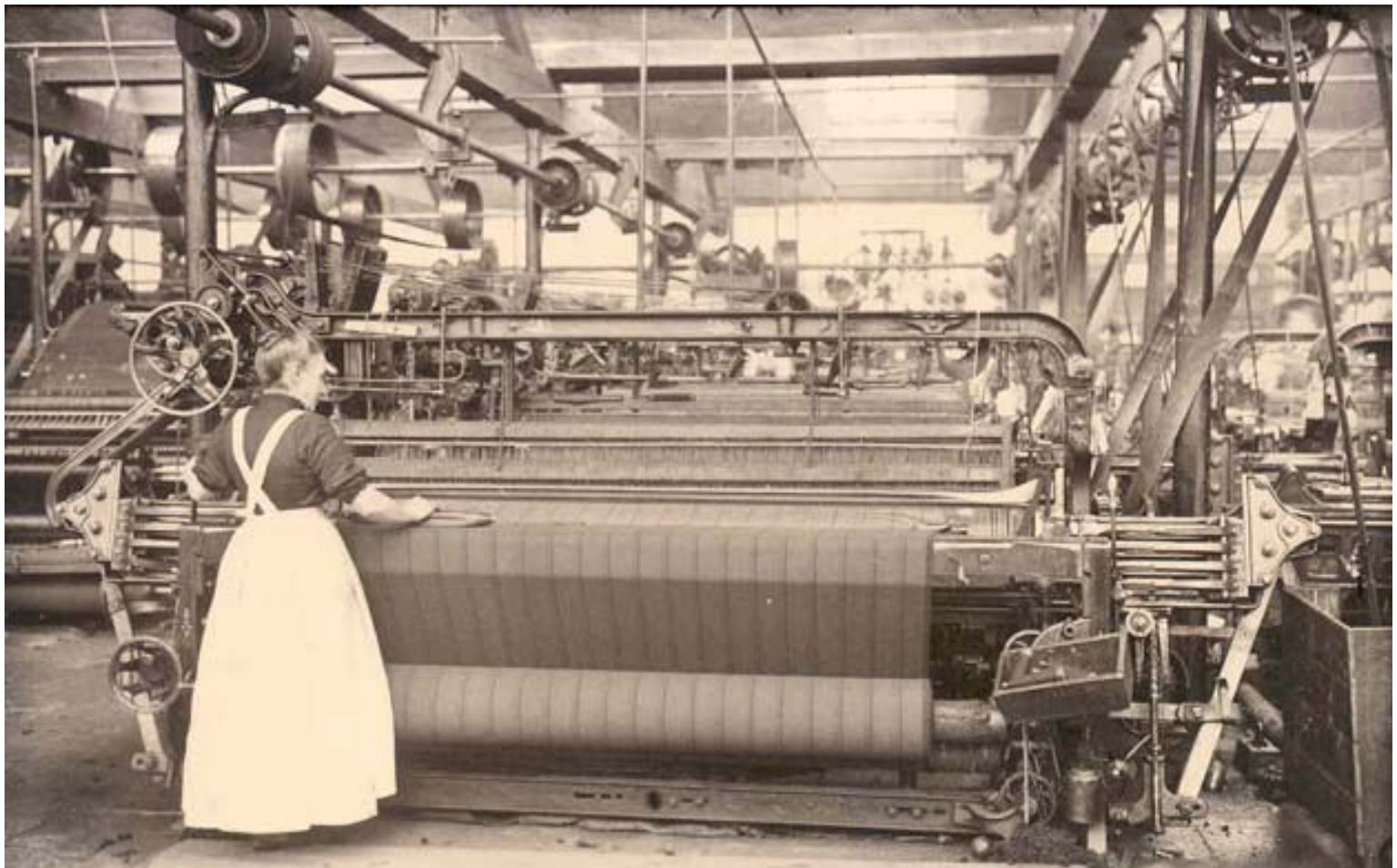
## Dynamo

Tim Harford tells the big story behind the way dynamos made electricity useful.

Available now

🕒 9 minutes

[BBC - 50 Things That Made the Modern Economy - Dynamo](#)



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# Thank You!



# Future of Higher Education

## Our Response to Disruption

Educause Annual 2018, Oct 31

Jim Phelps  
Director of Enterprise Architecture and Strategy  
Chair, Itana (<http://itana.org>)  
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# Future of Higher Education Playbook for Institutions

# Future of Higher Education: Summary of Drivers and Responses

Digital Transformation (DX)	Shifting Skills	Employment & Income Challenges	Higher Ed Financial Crisis
<p><i>Drivers (DX)</i></p> <ul style="list-style-type: none"> <li>• New technologies that impact all aspects of society</li> <li>• Unknown “winners and losers”</li> </ul>	<p><i>Drivers (Workforce)</i></p> <ul style="list-style-type: none"> <li>• New classes of jobs, skills, and competencies</li> <li>• Shifting emphasis on “above the line” competencies</li> </ul>	<p><i>Drivers</i></p> <ul style="list-style-type: none"> <li>• Increasing numbers of existing jobs displaced</li> <li>• Rising tuition, while many students &amp; households are financially challenged</li> </ul>	<p><i>Drivers</i></p> <ul style="list-style-type: none"> <li>• Growing number of institutions closing or merging</li> <li>• Many institutions likely to enter bankruptcy</li> </ul>
<p><i>Suggested Responses</i></p> <ul style="list-style-type: none"> <li>• Build adaptability into your organization.</li> <li>• Educate leadership and campus about the DX Story</li> <li>• Create a futurology practice</li> <li>• Build a DX Change Management Office or Practice to engage all of campus in the DX change</li> <li>• Develop pedagogy and content for to help students understand the DX</li> </ul>	<p><i>Suggested Responses</i></p> <ul style="list-style-type: none"> <li>• Create a strategic investment fund for reskilling our workforce</li> <li>• Build a Strategic Workforce Development Center that focuses on continuous development</li> <li>• Create a continuous learning and improvement culture among all staff</li> <li>• Actively manage Human Resource debt</li> </ul>	<p><i>Suggested Responses</i></p> <ul style="list-style-type: none"> <li>• Create more graceful entry and exit points for students / lifelong learners</li> <li>• Leverage DX technologies to make sure the student receives the best, most efficient experience</li> <li>• Drive down administrative costs through automation, autonomous systems, etc.</li> <li>• Look for partnerships to offset student tuition</li> </ul>	<p><i>Suggested Responses</i></p> <ul style="list-style-type: none"> <li>• Look for merger opportunities to build footprint, brand or find efficiencies</li> <li>• Build up endowments / reserves to buffer against continued financial risks</li> <li>• Find alternate funding sources (partnerships) to offset tuition and lost government revenue</li> <li>• Eliminate or collapse departments</li> </ul>



# Future Higher Education Institution

Data Driven Foremost	Digital Experience is Central	Automation for student experience	Lifelong learners, working learners are common
<ul style="list-style-type: none"> <li>• Need to automate to drive efficiencies</li> <li>• Measure effectiveness of experience</li> <li>• Measure outcomes</li> <li>• Drive hyper-personalization</li> </ul>	<ul style="list-style-type: none"> <li>• Multiple experience designs support diverse learners</li> <li>• Hyper-personalization is the norm</li> </ul>	<ul style="list-style-type: none"> <li>• Automation matches students to courses, peer groups, co-curricular activities, advisors and mentors, supporting services like transportation, food, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Multimodal education supports lifelong learners, when and where they learn</li> <li>• Multiple graceful entry/exit points deliver learning achievements from microcredentials to degrees</li> </ul>
Automate Everything	Workforce Development is strategic	Innovation and Reinvention are core	Mergers and Partnerships extend the experience
<ul style="list-style-type: none"> <li>• Match researchers to grants &amp; pre-populate applications</li> <li>• Match student applicants with best fit and experience</li> <li>• Drive efficiencies in facilities and administrative tasks</li> </ul>	<ul style="list-style-type: none"> <li>• Constant workforce development focused on reskilling and realigning roles</li> <li>• Matrixed organization is focused on the digital experience</li> </ul>	<ul style="list-style-type: none"> <li>• Constant feedback and measure drives innovation and reinvention of the experience and drives efficiency</li> <li>• New technologies and changes in society require innovation and reinvention to be core to the culture</li> </ul>	<ul style="list-style-type: none"> <li>• Learners can attend a partner campus close to work/home</li> <li>• 3rd party partners extend the experience to transport, housing, food, etc.</li> </ul>

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