



# Higher Education's Dew Point and the Art of Kintsugi

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*Kintsugi* – golden joinery or patch with gold (usually lacquer epoxy pasted with gold)





18" Kintsugi plates made by Lakeside Pottery Studio for Chef Morimoto's restaurant entry effect in Disney Spring, Florida, 2016

<https://www.bernardaud.com/en-gb/collections/dinnerware/design-table/kintsugi-sarkis>



<http://www.lakesidepottery.com/Pages/kintsugi-repairing-ceramic-with-gold-and-lacquer-better-than-new.htm>

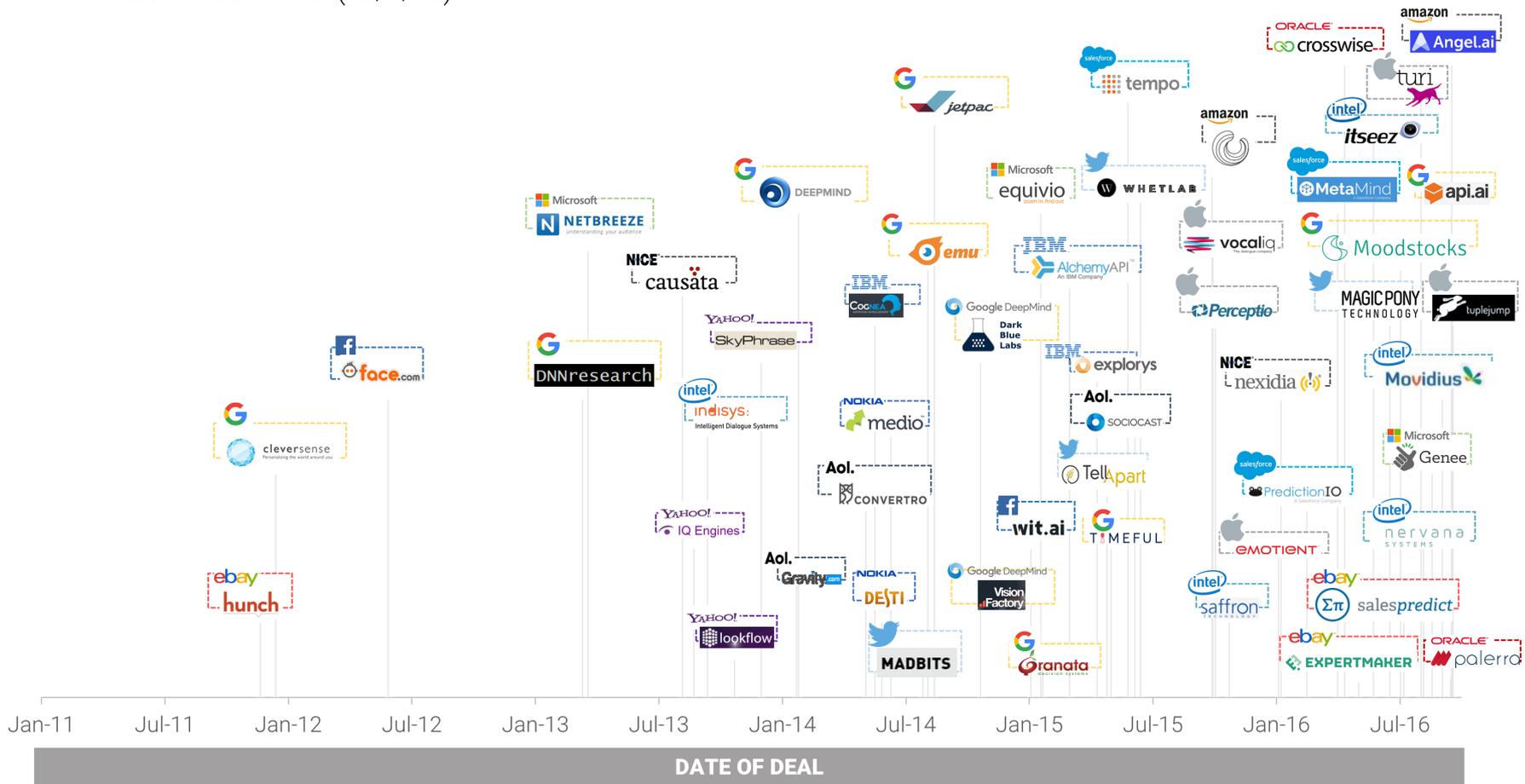


<http://www.unmissablejapan.com/etcetera/kintsugi>



# RACE FOR AI: MAJOR ACQUIRERS IN ARTIFICIAL INTELLIGENCE

2011 - 2016 YTD (10/7/16)





# ROBOTS R' US: MARKET MAP OF 50+ CONSUMER ROBOTICS STARTUPS

2013-2016 (as of 10/5/2016)

## EDUCATIONAL



## SOCIAL



## PERSONAL DRONES



## HOUSEKEEPING



## SERVICE (OTHER)



## DESKTOP ARMS



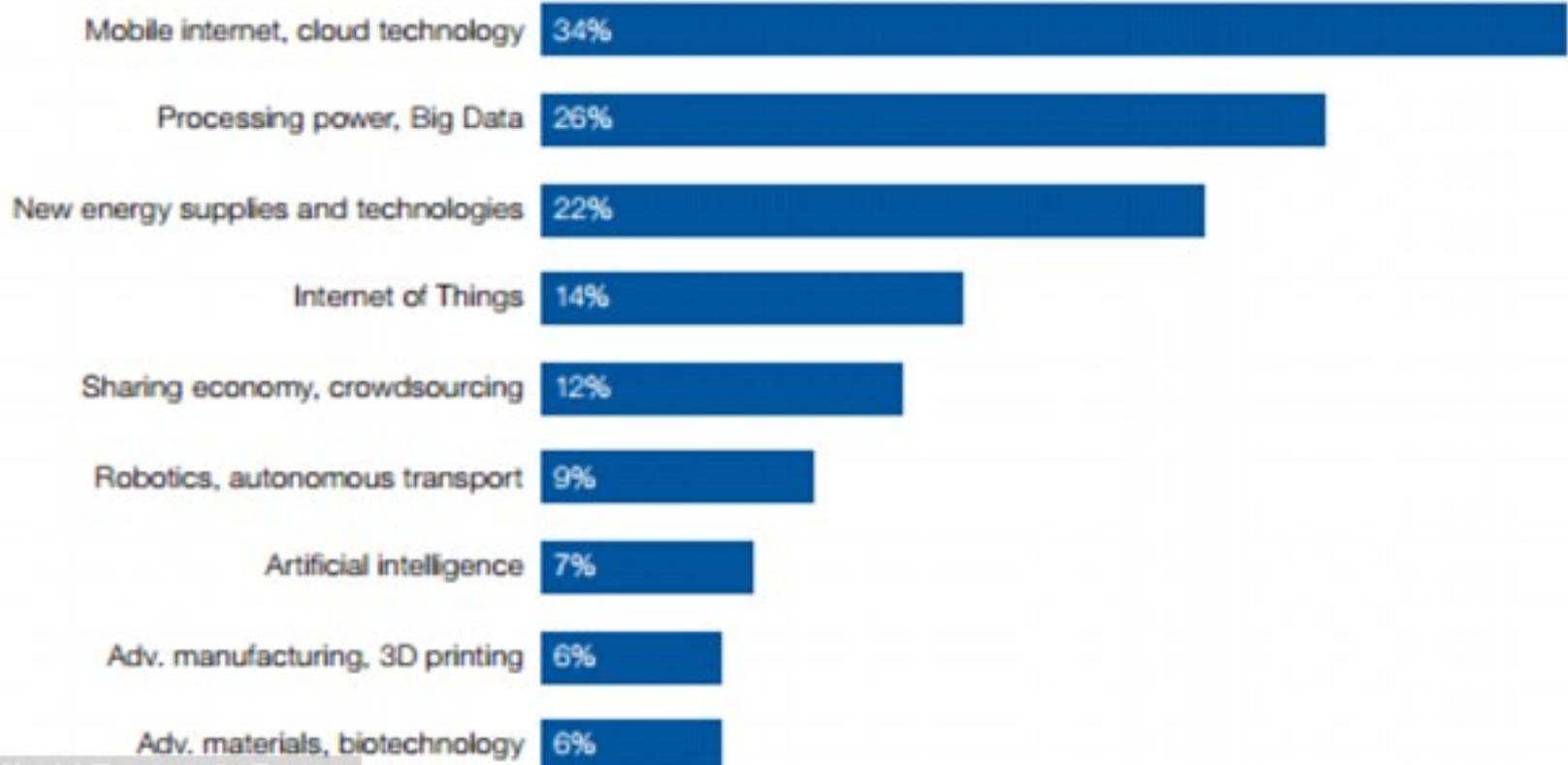
## COOKING/BARTENDING



## TRANSPORTATION/LUGGAGE



## TECHNOLOGICAL



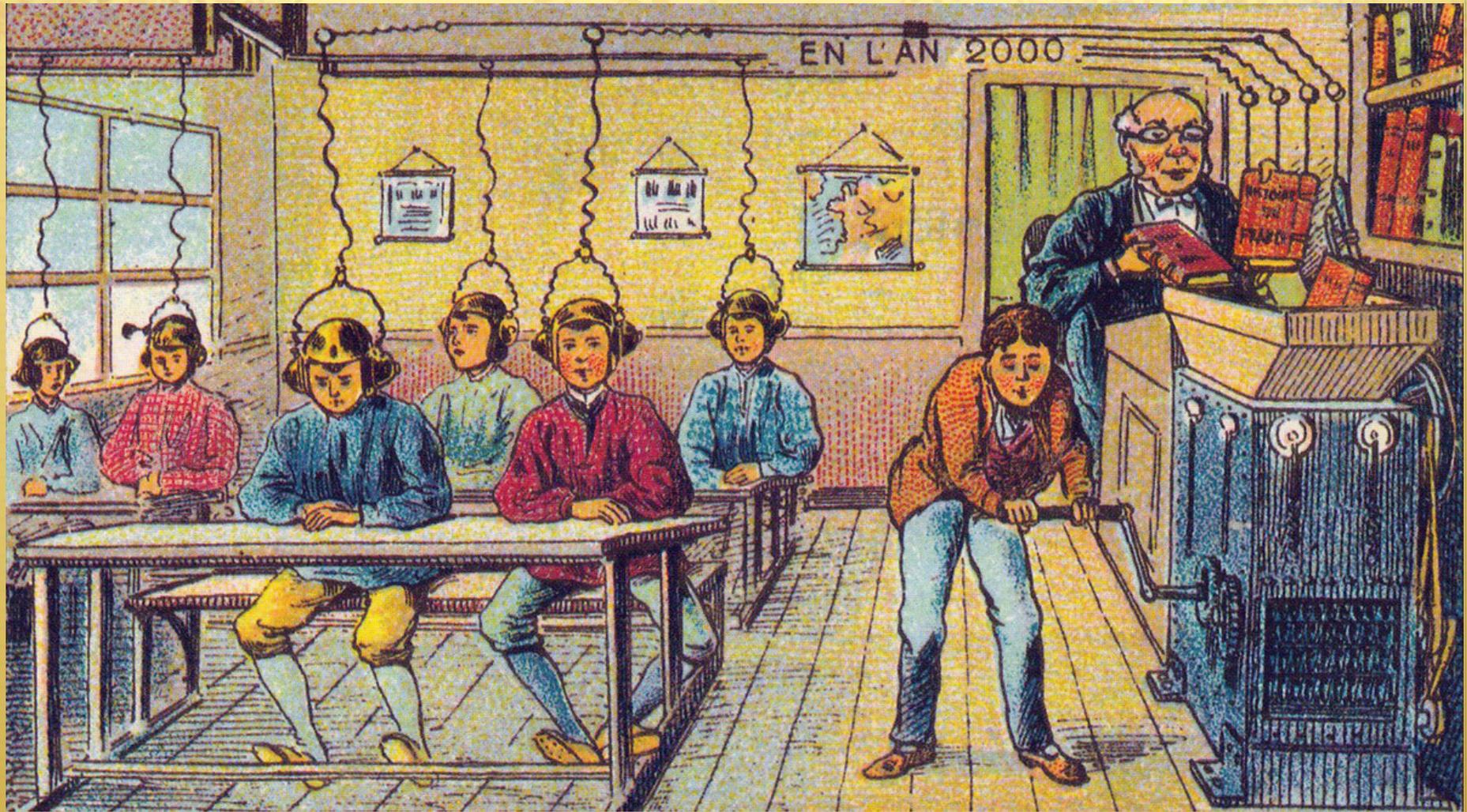
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<http://www.dailymail.co.uk/sciencetech/article-3441166/Has-robot-taken-job-New-figures-reveal-America-record-breaking-260-000-robots-working-factories.html>



# Law Firms Hiring AI Lawyers Named ROSS





The Public Domain Review, Jean-Marc Côté images is *At School*, circa 1900

What is your vision of the future in 2065? Or even 2035?

What kind of skills, proficiencies, knowledge would we be equipping college graduates with to not only survive, but thrive in the futures you have envisaged?

The continuing growth in robotics is opening many new job opportunities for the people who can program, install, run, and maintain robots.

Jeff Burnstein, President RIA, Feb. 2016

That means Science, Technology, Engineering and Math (perhaps plus Economics??)

And the rest?

Joi Ito – No-discipline

MH Field -  $\pi$

# Reality Check



- ✦ Higher Education is seen as important and necessary
- ✦ Trends – fiscal, technological and cultural – are catalysts for changes in higher education
- ✦ But, (one of) the elephant(s) in the room is being exposed
- ✦ Cost of the privilege



Selingo: degree graduates accrue 40c more for per \$ earned than a person without a degree in U.S.

**This is the lure that keeps individuals chasing the university dream.** The university diploma is believed to be the pathway to escape a dead-end job – or no job.

Selingo, J.J. 2013, *College (Un)bound: the future of higher education and what it means for students*, Amazon Publishing

(We should be cautious of such claims as huge remuneration differences exist with the professional and STEM graduates over non-degree individuals, but these same benefits may not necessarily be as great for administrative and office support personnel.)

*Degree inflation* - in U.S., the number of people with a Master's degree is about equal to the number of people with a Bachelor's degree in 1960.

Selingo, J.J. 2013, *College (Un)bound: the future of higher education and what it means for students*, p.10, Amazon Publishing

**Even with a professional-focused program, we should question whether the *inflation* is actually necessary, is it a result of supply and demand or is it that our university programs are out of date?**

If a high percentage of a country's higher educational institutions are in the *for profit* business and not the *for education* market, and if organizations are complaining about graduates' output skills and proficiencies, then at least three concerns need to be addressed:

- **what is the *return on investment* (ROI) for the employer who usually remunerates those with a Bachelor degree more generously than those without a degree, and reciprocally,**
- **what is the ROI for the graduate who is required to outlay increasingly large fiscal resources (often requiring loans or deferred payment that attract unscrupulous interest and penalties), and**
- **why should a student *endure* three or four years of university study if the end goal is merely to get a job – often, any administrative position?**

## Return On Investment (ROI) for getting a university degree?

$$ROI_d = C_d + OC < \sum S_{di} - \sum S_{dni}$$

the **ROI for a degree** ( $ROI_d$ ) is equal to when the **cost** of the **degree** ( $C_d$ ) plus the **Opportunity Cost** (OC – salary not earned whilst at university is evaluated by the salary earned by the non-degree individual working at the same company over the period of university study period) becomes less than the **cumulative differences** between the indexed **salaries** of an employee **with a degree** ( $S_{di}$ ) and one **without a degree** ( $S_{dni}$ ).

Ample evidence from most countries to demonstrate that students graduating with professional STEM-related degrees will earn vastly more

This is becoming less convincing for university graduates who follow administrative and/or office work careers

Mal ref  
source is  
diff for data

$$ROI_d = Cd + OC < \sum S_{di} - \sum S_{dni}$$

## Japan

average salary for an administrative or office support employee with a degree ¥5,240,000, and for those with only high school education or below, ¥5,500,000 (\$45-50,000 for both)

average new graduate salary (across all fields) varies between ¥2,000,000 and ¥2,503,000 (US\$25,000-\$27,000)

average starting salary office/admin (females - males no diploma) ¥1,562,000 - ¥1,634,000 (US\$15,000-\$16,000)

average starting salary office/admin (females - males with 4Y diploma) ¥1,988,000 - ¥2,045,000 (US\$20,000 about for both)

average difference office/admin (females - males) ¥426,000 - ¥411,000 (US\$4,000 about for both)

cost of Humanities type degree ranges from about ¥2,000,000 - ¥7,500,000 (US\$20,000 - \$72,000) plus alpha costs

$$ROI_d = Cd + OC < \sum S_{di} - \sum S_{dni}$$

$$Cd = \text{¥}2,000,000^*$$

$$OC = \text{¥}1,562,000 \times 4 \text{ (F)} \text{ or } \text{¥}1,634,000 \times 4 \text{ (M)} - \text{about US\$64,000}$$

$$\text{Sub-total} = \text{¥}8,200,000 \text{ (or up to ¥13,600,00)}$$

$$S_{di} - S_{dni} = \text{¥}426,000 \text{ and } \text{¥}411,000$$

$$ROI_d = \text{¥}8,200,000 < \sum \text{¥}426,000 \text{ or } \text{¥}411,000 \text{ in } x \text{ years}^{**}$$

OR about **20 years**

\* This figure would be based on one of the cheapest public university's fees

\*\* Does not consider small greater increments for people with degree against those without degree each year

**CANNOT achieve ROI on fiscal outlay**

This becomes particularly problematic for females

- often do not have equal salaries or increments to salaries
- often are not able to follow similar career pathways to men
- cultural pressure to quit after getting married or having a child
- who may quit because of dissatisfaction but then find it difficult to acquire a position of equal or better remuneration

*Hanayome gakko* 花嫁学校

– flower bride school or bridal preparation school

Only Japan? Think again!

The Guardian, 18<sup>th</sup> August 2016

<https://www.theguardian.com/education/2016/aug/18/gap-between-graduate-and-non-graduate-wages-shows-signs-of-waning>

The main reason for the continuing graduate wage premium, the IFS said, was that firms had created more graduate jobs by hiring more managers and switching to less hierarchical structures. “This process cannot go on forever,” it said.... The IFS researchers said they were puzzled that **the rapid expansion in higher education numbers in recent years had not caused the 20% drop in the graduate wage premium their models predicted**. Instead, they found that the labour market had changed to increase the proportion of staff working in management...it said increasing numbers of future graduates “**would result in declines in the education wage differential**” once the trend of hiring extra graduates into management had run its course. “There is already some sign of this decline in the private sector. The wage differential, though, remains substantial,”

The Guardian, 11<sup>th</sup> October 2016

<https://www.theguardian.com/money/2016/oct/11/huge-increase-in-number-of-graduates-bad-for-uk-economy>

The government is being urged to end the political drive to get more people into university after new research showed that graduates are “colonising” jobs in banking, education, the police and estate agency **that were the preserve of school-leavers in the past.**

The Chartered Institute of Personnel and Development said the notion of a tertiary education premium is being called into question by graduates’ average debt of £44,000 and official **estimates that 45% of loans would never be paid off**... report shows clearly how the huge increase in the supply of graduates over the last 35 years has resulted in more and more occupations and professions being colonised by people with degrees, **regardless of whether they actually need them to do the job... the costs of university education outweigh its personal economic benefits**, we need a much stronger focus on creating more high-quality alternative pathways into the workplace, such as higher level apprenticeships, so we really do achieve parity of esteem between the two routes.

The Guardian, 5<sup>th</sup> July 2017

<https://www.theguardian.com/education/2017/jul/05/poore-st-students-will-finish-university-with-57000-says-ifs>

“...this government has focused on increasing the debt burden students from disadvantaged backgrounds... student debt continues to rise with no end in sight, and students will now graduate with a shocking average of over £50,000 in debt. The government must decide if they believe a lifetime of debt and a tax on aspiration are the best way to fund our higher education system.”

Outstanding debt on loans jumped by 16.6% to £100.5bn at the end of March, up from £86.2bn a year earlier, according to figures released by the Student Loans Company. **Many debts will not even be paid off within a 30-year time scale.**

Perhaps, some good news... except for Australia!

...more than 77% of those taking out student loans will have some or even all of the loans paid off by the government **because graduates will not earn enough to repay their loans within that time.**

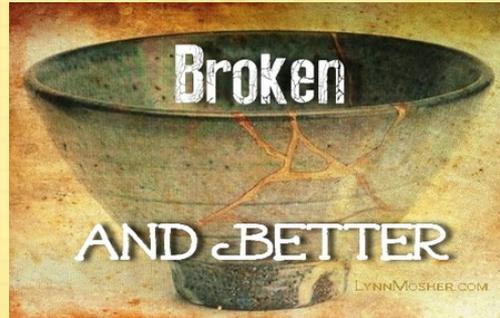
We need to assume that tomorrow's jobs will be different to what is available today.  
We need to assume that technology will modify many professions and the tasks required within existing jobs.

We need to assume that new skills and knowledge will be required to fill the gap for both the deficiencies and new opportunities that will emerge.

We need to assume that higher education, which is becoming a costly exercise, cannot produce workers that are cheaper or more efficient and effective than technology in either the so-called low-skilled white or blue collar industries that exist today.

### Three options/possibilities

- Universities are charging too much
- Companies are not paying enough
- Companies do not think graduates (with some degrees) are worth it



Higher Education won't disappear but many will fall by the way if we don't break what has been created and rebuild