Chapter 1. Why the Internet Economy Raises Inequality - Implications For Media Managers

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Introduction

In countries undergoing de-industrialization – and which isn't, among developed economies—an internet-based economic growth has been widely recommended as a way to create economic activity and thereby reduce the inequality of post-industrial society. In particular, the opportunities that the internet affords to the 'creative workforce' are believed to be an engine for employment, at a time when industrial jobs are being automated.

Because this is important, we have to confront the question openly, with no nostalgia for the past, love for the future, and without wishful thinking about the present.

Gains

The conventional story is one of great success, tempered only by the decline of inefficient oligopolies such as the music industry. The internet is supposed to have caused up to 21% of GDP growth in 5 years in mature countries[8] ; In the US, the internet economy has reportedly created 1.2M jobs[9] directly, according to a Harvard Business School study[10] . In France, too, the internet has supposedly created 1.2 million jobs

8 Du Rausas, et. al. *"Internet matters: The Net's sweeping impact on growth, jobs, and prosperity."* McKinsey Global Institute. May 2011

9 Thibodeau, Patrick. *"Study: Internet economy has created 1.2M jobs."* Computerworld. 10 June 2009. http://www.computerworld.com/article/2525229/internet/study--internet-economy-has-create-1-2m-jobs.html

10 Quelch, John. *"Quantifying the Economic Impact of the Internet,"* HBS Working Knowledge. 17 August 2009. http://hbswk.hbs.edu/item/6268.html

directly.

But what kinds of jobs? In the US, most of them were in e-commerce, not in anything really creative. E-commerce companies, as well as those that deliver the physical goods, were the major employers, with more than 500,000 of the 1.2 million jobs. Internet service providers generated 181,000. Creative jobs were, in particular, in content-related employment, estimated at 60,000, and in software as a service, 31,500[11].

These modest numbers are in contrast to the sometimes breathless hype. For the internet of things, a trade magazine gushed "While today there are just 300,000 developers contributing to the IoT, a new report from VisionMobile projects a whopping 4.5 million developers by 2020, reflecting a 57% compound annual growth rate and a massive market opportunity[12]. "

On the positive side of the ledger, there were also new types of jobs spawned by various applications. For example, new taxi drivers[13] due to the car service app Uber. Thus there are also many indirect job creations. A study found that each internet job supports approximately 1.54 additional jobs elsewhere in the economy[14] . Another study, conducted by the McKinsey Global Institute using data from 13 countries, found that for every job destroyed, the internet created 2.6 new jobs, for a net addition of 1.6[15] . In France, for example, the internet destroyed 500,000 jobs in the past 15 years but created 1.2 million jobs, for a net addition of[16] 700,000.

Losses

Let us now also look at the downsides. Even the quintessential computer geek, Bill Gates, warned

"Software substitution, whether it's for drivers or waiters or nurses…over time will reduce demand for jobs, particularly at the lower end of skill set. ...20 years from now, labor demand for lots of skill sets will be substantially lower. I don't think people have that in their mental model[17]."

Gates got it half right. Some job losses are upon us. But it's not the lower end but the middle that will suffer[18].

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11 Thibodeau, Patrick. *"Study: Internet economy has created 1.2M jobs."* Computerworld. 10 June 2009. http://www.computerworld.com/article/2525229/internet/study--internet-economy-has-create-1-2m-jobs.html

12 Asay, Matt. *"The Internet of Things Will Need Millions of Developers by 2020,"* readwrite. 27 June 2014. http://readwrite.com/2014/06/27/internet-of-things-developers-jobs-opportunity

13 Bensinger, Greg. *"Apps are Creating New Jobs,"* Wall Street Journal. 5 March 2013. http://online.wsj.com/news/articles/SB10001424127887323864304578320861732248742

14 Quelch, John. *"Quantifying the Economic Impact of the Internet,"* HBS Working Knowledge. 17 August 2009. http://hbswk.hbs.edu/item/6268.html

15 http://www.mckinsey.com/insights/high_tech_telecoms_internet/internet_matters

16 http://www.iei.liu.se/facksprak/engelska/civilingenjorsutbildning/then18/kursmaterialarkiv/lesson-six/1.497919/The_great_transformer_Impact_of_Internet_on_economic_growth.pdf

17 Bort, Julie. *"Bill Gates: People Don't Realize How Many Jobs Will Soon Be Replaced By Software Bots,"* Business Insider. 13 March 2014. http://www.businessinsider.com/bill-gates-bots-are-taking-away-jobs-2014-3

18 Bort, Julie. *"Bill Gates: People Don't Realize How Many Jobs Will Soon Be Replaced By Software Bots,"* Business Insider. 13 March 2014. http://www.businessinsider.com/bill-gates-bots-are-taking-away-jobs-2014-3

The Internet-Induced Job Losses In The Industrial Sector

In the US, industrial blue collar jobs have disappeared at the rate of 350,000 industrial jobs each year in the US for 2 decades now. Plus the multiplier effect jobs, about 1.6 per industrial worker and 2.5 per skilled industrial worker. This adds up to a job loss of about half a million each year. Of course, many would have disappeared with or without the internet, but – and this is important-- more slowly. Transition time makes a difference. People would have had more time to adjust, to retrain, to relocate. The internet has accelerated the displacement of industries and the outmigration of jobs. Erik Brynjolfsson and Andrew McAfee of MIT argue in their book, Race Against the Machine[19], that progress in information and communication technology (ICT) may be occurring too fast for labor markets to keep up.

Take the photography company Kodak. It employed more than 140,000 people. It even invented the first digital camera. But Kodak went bankrupt when that same digital photography moved to internetworked mobile phones. A major player in that new field is Instagram. Instagram was bought by Facebook for a billion dollars in 2012, and at that time employed only 13 people[20]. It, and the designers of phone-based digital cameras will not provide employment for the tens of thousands of Kodak manufacturing workers who have lost their jobs.

The Impact Of The Internet On Service Jobs

After the blue collar jobs, the pink collar jobs in retailing and clerical staffs began to shrink as retailing moved online. Similarly, service support jobs such as telemarketing or editorial work have been moving offshore. Middle management levels have been cut as ICT made supervision and information exchange easier, thus reducing the need for intermediate levels of management.

Online shopping has been growing steadily, with a share, in the US, of 12% ($473 billion) of total retail sales ($4.03 trillion) in 2014[21]. The drop in retail jobs has been pronounced, with a reduction of 900,000 jobs in the five years following 2007, a decline of nearly 6%.[22] In the UK, a research project predicted, according to its director, professor Joshua Bamfield : "By March, we expect 4,000 to 5,000 stores to close due to competition from online retail, with an acceleration in chains closing stores to focus

19 Brynjolfsson, Erik & McAfee, Andrew. Race Against the Machine. Digital Frontier Press, 2011.
20 Timberg, Scott. *"Jaron Lanier: The Internet destroyed the middle class,"* Salon. 12 May 2013. http://www.salon.com/2013/05/12/jaron_lanier_the_internet_destroyed_the_middle_class/
21 Mintel Market Sizes. New York NY. 2014. Last accessed on June 23rd 2015 at http://clio.columbia.edu/catalog/8010526?counter=2.
22 Wright, Joshua. *"The Demise of Retail Jobs? Not So Fast,"* emsi. 16 April 2012. http://www.economicmodeling.com/2012/04/16/the-demise-of-retail-jobs-not-so-fast/

more on online operations.[23]

Retailing is not the only service industry to be affected. A short list of some of the major services whose employment has been strongly affected by the internet[24] includes music, newspapers, travel agencies, stock brokerages, and soon also universities. So we have more than a de-industrialization, but also a "de-servicization".

The Unequal Impact On Different Income Classes

The problem is not just that we lose jobs, but that the losses are distributed unequally. In the United States, half the 7.5 million jobs lost during the Great Recession were in industries that pay middle-class wages. But only 2 percent of the 3.5 million jobs gained since the recession ended in mid-2009 were in mid-pay industries. Nearly 70 percent are in low-pay industries, and 29 percent in industries that pay well.[25]

In the 17 Euro countries the numbers are even worse. Almost 4.3 million low-pay jobs have been gained since mid-2009, but the loss of midpay jobs has not stopped[26]. In Japan, a 2009 report from Hitotsubashi University in Tokyo documented a "substantial" drop in mid-pay, mid-skill jobs in the five years through 2005, and linked it to technology. [27]

Many middle level jobs are easier to automatize by smart software programs, or to outsource and offshore, than low-level jobs. One can automatize travel agents and bank tellers, but it is harder to do it for road construction or cleaning crews. A study by David Autor of MIT and David Dorn of the Centre for Monetary and Financial Studies in Madrid[28] graded occupations in terms of their vulnerability to automation. They identified the jobs of secretaries, bank tellers and payroll clerks as among those most dominated by routine tasks.

Industries that adopted IT at faster rates also saw the fastest growth in demand for the most educated workers, and the sharpest declines in demand for people with intermediate levels of education. Thus, whereas in the 1970s and 1980s employment in middle-skilled, middle-income occupations grew faster than that in lower-skilled jobs, by the 1990s employment in middle-class jobs began to decline as a share of the total

23 Reilly, Jill. *"Booming internet sales 'will close 5,000 High Street stores and const 50,000 jobs'."* Daily Mail. 1 January 2013. http://www.dailymail.co.uk/news/article-2255677/Booming-Internet-sales-close-5-000-High-Street-stores-cost-50-000-jobs.html

24 *"Industries Destroyed by the Internet* – A Reflection," Briefing Investor. 26 July 2012. http://www.briefing.com/investor/our-view/ahead-of-the-curve/industries-destroyed-by-the-internet--a-reflection.htm

25 Condon, Bernard & Paul Wiseman. *"Millions of Middle-Class Jobs Killed by Machines in Great Recession's Wake,"* Huffington Post. 23 January 2013. http://www.huffingtonpost.com/2013/01/23/middle-class-jobs-machines_n_2532639.html

26 Condon, Bernard & Paul Wiseman. *"Millions of Middle-Class Jobs Killed by Machines in Great Recession's Wake,"* Huffington Post. 23 January 2013. http://www.huffingtonpost.com/2013/01/23/middle-class-jobs-machines_n_2532639.html

27 Condon, Bernard & Paul Wiseman. *"Millions of Middle-Class Jobs Killed by Machines in Great Recession's Wake,"* Huffington Post. 23 January 2013. http://www.huffingtonpost.com/2013/01/23/middle-class-jobs-machines_n_2532639.html

28 Autor, David & Dorn. *Polarization of Job Opportunities in the U.S. Labor Market*. Boston: MIT Department of Economics. 2010.

while the share of both low- and high-skilled jobs rose. [29]

The data shows these trends, with middle income occupations losing out, while upper and lower income occupations have been gaining.

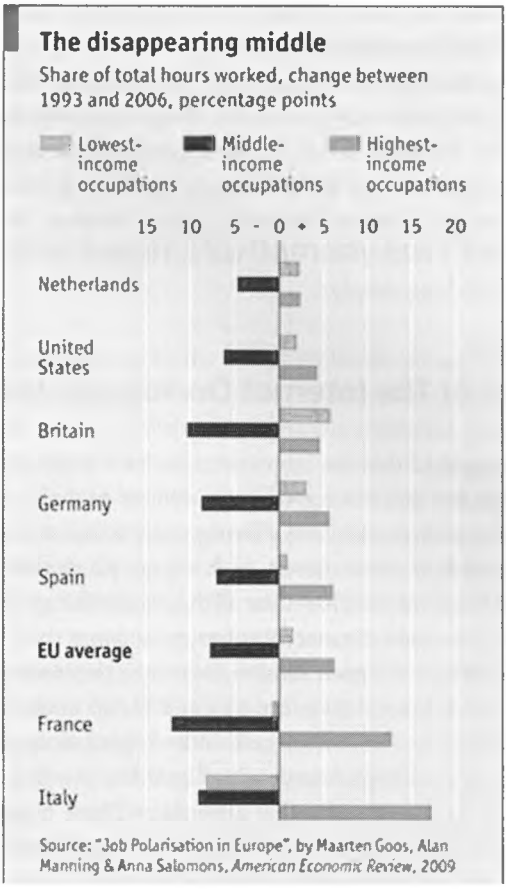

Figure 1: "Automatic reaction,"

Source: The Economist. 9 September 2010. http://www.economist.com/node/16990700

Of course, warnings about challenges to the middle class have been around for a long time, as David Gordon has pointed out, and have been a staple for political candidates on the stump. ICT was seen as a way to turn this around. Yet a study by Guy Michaels, Ashwini Natraj and John Van Reenen of the London School of Economics for 11 countries finds that industries that adopted ICT at faster rates (as measured by their spending on ICT and R&D) also experienced the fastest growth in demand for

29 *"Automatic reaction,"* The Economist. 9 September 2010. http://www.economist.com/node/16990700

the most educated workers, and the sharpest declines for those with intermediate levels of education. [30]

This "hollowing out" of the middle-class workforce will continue. [31] The US Bureau of Labor Statistics predicts that employment in low-skilled service occupations will increase by 4.1m, or 14%, between 2008 and 2018. The only major job category with greater projected growth is that of professional occupations, which may add 5.2m jobs, or 17%[32] It is much lower for middle class jobs. So we create a bottleneck. Menial jobs at the bottom, professional jobs at the top, and a weakening in the middle.

This has a lot of implications. It means that the job mobility from lower to middle class, which had been the historic way to individual progress, is becoming more difficult. The lower occupations are blocked. Social mobility is down. For much of the 20th century, people's job prospects rose with extra education. And while this is still true, the effect is lessened at the lower end. And this happens at the time when the cost of education keeps climbing steeply.

The Impact Of The Internet On Younger Workers

It is generally suggested that the internet might leave behind older folks unprepared for the digital age, but that it is a great improvement in the opportunities of young people. If so, how come their standard of living today is lower than those of the preceding generation, and how come there is such a huge youth unemployment in many advanced countries? If the internet has done all these great things for the digitally native generation, and if it has made distance obsolete, how come they live more than ever with mom and dad? There is a great illusion, that since the internet has been creating young multi-billionaries, it must therefore be good for an entire generation. But that is a sloppy conclusion. The internet creates, indeed, greater opportunities for a few, with education, a spirit of entrepreneurship, and luck. But this does not prove anything for the average opportunities of the young generation. Those opportunities follow the overall polarization of jobs—more opportunities at the professional top. More opportunities at the bottom. And fewer opportunities in the middle, and the middle is where young people with some skills and education must go, because it is the way to the top.

The Impact Of The Internet On Older Workers

Paradoxically, a similar problem happens at the other end of the age spectrum. The

30 Michaels, Guy & Natraj, Ashwani, & Van Reenen, John *"Has ICT Polarized Skill Demand?"* London School of Economics. 2014.
31 Condon, Bernard & Paul Wiseman. *"Millions of Middle-Class Jobs Killed by Machines in Great Recession's Wake,"* Huffington Post. 23 January 2013. http://www.huffingtonpost.com/2013/01/23/middle-class-jobs-machines_n_2532639.html
32 *"Automatic reaction,"* The Economist. 9 September 2010. http://www.economist.com/node/16990700

rapid change in knowledge and technologies means that the learning curve is short, and that there is less value to experience. In the past, an experienced elder had the advantages. Now, the old become expensive, out of date, and expendable. They get bumped out of the middle level jobs where competition for the jobs is tougher. Their skills become obsolete for the top jobs. And the menial jobs at the bottom are often physically too demanding. So there is less room for older workers. And this is just at the time when life expectancies rise. When retirement systems become unaffordable to societies. And when companies find ways to avoid paying taxes to contribute to the pot. Thus, the same technological progress that enables society to keep old folks' bodies alive longer is also shortening the value of their minds. [33]

Is The Creative Sector The Remedy For These Job Losses?

Is the creative sector going to be the substitute for all of those industrial and service sector jobs that are being lost? This claim, often heard, is absurd if one looks at the numbers. It just shows that many creatives who make the argument, or politicians and intellectuals, substitute wishful thinking for statistics. In America, the number of industrial jobs lost over the past decade has been 5 million, including the multiplier effects. The number of retail jobs lost has been over a million.[34] The number of people with jobs in journalism, books, TV, film, theater, music, is less than one million. So one would have to expand that sector by a factor of 7. But who would watch, read, or listen to all their new creations? And, who is going to pay for all this, so that these creators actually get a paycheck? People are not going to watch 7 times more TV and its advertisements, they already do so for 7 hours a day. Plus, a lot more people produce content as volunteers, not as a job. Plus, the globalization of media means that every other country's content is also available, and is also expanding, by the same logic, by a factor of 7.

While the claims of creative jobs that will offset industrial and service losses are being touted, let us note that journalist jobs are melting like butter in the sun. That most musicians do not get paid anymore by anyone. That fewer people read books, though more books get written. That TV networks are a shade of their former selves, and that the cable networks are very leanly staffed operations. Even if one expands the definition of creatives to software, which is indeed growing, and even if one includes a generous multiplier, the numbers do not support the notion that the creative sector will be an offset to the industrial and service job losses.

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33 Greenspun, Philip. *"Technology reduces the value of old people,"* Philip Greenspun's Weblog. 29 October 2009. http://blogs.law.harvard.edu/philg/2009/10/29/technology-reduces-the-value-of-old-people/

34 Wright, Joshua. *"The Demise of Retail Jobs? Not So Fast,"* emsi. 16 April 2012. http://www.economicmodeling.com/2012/04/16/the-demise-of-retail-jobs-not-so-fast/

To conclude: the Internet is a force for inequality. It creates inequality among occupational classes, among regions, and among generations.

So far, the neo-classical economic analysis of the right matches that of critical media scholars on the left. Where they part company is in the analysis of the causes and therefore also of the remedies. Many critical media advocates believe that the problem is caused by profit-focused internet moguls, mostly Americans, like Gates, Zuckerberg, Bezos and the Google boys. Stop them and the world will be a better place. But this view is quite incomplete. Some people end up at the top, by luck, pluck, and connections. The real question is not who ends up at top but whether the new technology defines economics, which defines a market structure with an employment configuration as well as content diversity, whose equilibrium is socially sub-optimal. Thus, the emerging unequal employment system may well be not the result of failure but of success. It is the result of fundamental economics that restructure economies fundamentally. And because they are fundamental they are very hard to deal with by government policy.

The Fundamental Economics Of The Internet

Fundamental Characteristic: #1 Of The Internet Economy: Internet Activities Are Typically Characterized by High Fixed Costs, Low Marginal Costs, And Network Effects.

Do the new Internet media make a difference on media industry concentration. in the way its enthusiasts believe? Internet media, after an early stage of a dynamically competitive market structure, often becomes highly concentrated. Various market segments have their dominant players — Amazon, EBay, Microsoft, Google, Facebook, Twitter, YouTube, Apple's App Store, and others. The Internet sector was believed to be wide open and competitive and would open things up for other industries, but it exhibits strong concentration trends. The underlying economics on the supply side are. high fixed cost and low marginal cost; and on the demand side, strong network effects. This leads to major economies of scale. And therefore, it results in highly concentrated industries, with a few firms the winners.

New information industries are more capital intensive than old ones. Their ratio of capital costs to operating costs is higher than in the past. In consequence, their scale economies are greater and their market concentration is higher. There are several business implications. The economies of scale lead to large-sized companies and consequently to market concentration. In the extreme, one encounters a winner-takes-all near-monopoly. There are therefore incentives to reach large size through mergers and/or to be a first-mover in a product in order to gain scale.

It means that the market structure among companies is highly unequal. Some firms win big, most lose out or are marginal. This trend is likely to continue, especially if the pace of disruptive innovation in the sector slows down a bit.

Fundamental Characteristic #2 of the Internet Economy: A High-Risk Distribution of Success

A major characteristic of media is its high risk in the presence of competition. One often observe a "80-20" outcome in which 80% of all media products do not become profitable, 90% of all profits are generated by 10% of the products, and 50% of profits are generated by 1-2% of products.

Every industry and company is structured like a tournament. And the question is how such a tournament is set up. Is it "winner-takes-all"? Or is it, "winner takes just a little more than the other participants"? The economic literature tells us that the higher the risk in the tournament, the greater one must make the disparity between the win-

ners and the losers. One must compensate the players by a higher jackpot. [35]

In accordance with this analysis, creatives' incomes are much more unequally distributed than regular incomes, due to the risk characteristics of their companies and industries. And that can be observed. The tournament profile of compensation for aspiring creatives is extraordinarily steep. Pay differentials in media are especially high due to an over-supply of talent, as well as due to an incentives structure where the few "winners" receive the majority of the reward.

Creatives usually overestimate the odds for personal success.[36] Low compensation and high risk are accepted nevertheless because of the high level of personal satisfaction inherent in artistic careers. In creative activities such as film and TV, or in sports, small differences in talent may typically result in extreme differences in reward.[37] These small talent differences are rewarded exponentially rather than linearly, which leads to highly skewed distribution of rewards. This model applies to many industries, but it is most pronounced in the creative industries because spots at the top are scarcer, and the bottom is much wider and lower. [38]

Fundamental Characteristic #3 of the Internet Economy: The Presence of Non-Maximizers of Profit

Many individuals in the media field derive utility from the process of creating a product, not from profiting from its sale. Producing the good is not a chore but a benefit. When this occurs it is hard to distinguish production from consumption. In media production creatives often seek to maximize recognition, not profit. Online media provide a greater way to create content and find an audience by lowering the cost of production and distribution, and hence have increased nonprofit participation.

Fundamental Characteristic #4 of the Internet Economy: Excess Supply

Media production increases exponentially at a substantial rate, while media consumption increases linearly and slowly. Content rises by about 12%, and attention rises by less than 4%. Given the gap between production (supply) and consumption (demand), excess supply is inevitable. This has consequences for both content style and

35 Brian L. Connelly, Laszlo Tihanyi, T. Russell Crook, K. Ashley Gangloff. *"Tournament Theory: Thirty Years of Contests and Competitions,"* Journal of Management, 2014

36 Caves, Richard E. *Creative Industries: Contracts Between Art and Commerce*. Cambridge: Harvard University Press, 2002.

37 MacDonald, Glenn M. *"The Economics of Rising Stars"*. The American Economic Review Volume 78

38 DeVany, Arthur. *"Contracting with Stars When Nobody Knows Anything"*. Hollywood Economics 2004

marketing.[39] Attention is the scarce resource.[40] As Nobelist Herbert Simon observed, "a wealth of information creates a poverty of attention."[41] New media consumption must be mostly supported by substitution from existing media in terms of time or full attention. Inevitably, this leads to competition for "mindshare" and "attention." Compared to 1998, fewer than half as many of the new products make it to the bestsellers lists, reach the top of audience rankings, or win a platinum disc. [42]

In almost any scientific field, more research articles were written just this year alone than in the entire history of human beings before 1900. In the field of chemistry, within a span of thirty-two years (1907-1938), one million chemistry articles were written and abstracted. In contrast, it took less than one year for a million such articles to be produced in 2010. Every thirty seconds, a new book is published. Every day, ten new feature films and 1,500 television shows are produced.

Fundamental Characteristic #5 of the Internet Economy: Price Deflation

When competition occurs the price drops towards marginal cost. In the short term, marginal cost is near-zero and does not cover fixed cost. The result of price competition with low marginal cost has been price deflation in information products and services. This is a good deal for the consumer who enjoy substantial "consumer surplus" in which they must shell out much less than they would be willing to pay if they had no choice. But it creates a difficult problem for the supplier.[43] Price deflation to marginal cost poses a threat to long-term viability since low prices make it difficult to cover costs and achieve profitability. And that is indeed what has been happening. Information has become cheaper for many a decade. It is often becoming difficult to charge anything for it. Music and online content is increasingly free. Newspapers become free. Such a Price deflation is one of the fundamental economic trends of our time. The entire competitive part of the information sector – from music to newspapers to telecoms to internet to semiconductors and anything in-between – has become subject to a gigantic price deflation in slow motion. This price deflation leads to economic pressure, to price wars which squeeze out weaker companies and subsequent consolidation of the more viable survivors.

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39 *"How Much Information."* School of Information Management & Systems, University of California, Berkeley. 2000. Last accessed on 14 May 2008 at http://www2.sims.berkeley.edu/research/projects/how-much-info/summary.html#consumption

40 Picard, Robert G. *"Environmental and Market Changes Driving Strategic Planning in Media Firms."* In Robert G. Picard, ed. Strategic Responses to Media Market Changes. Jönköping, Sweden: Jönköping International Business School, 2004. pp. 1-18.

41 Simon, Herbert. *"Designing Organizations for an Information-Rich World."* in Martin Greenberger. Computers, Communication, and the Public Interest. Baltimore: The Johns Hopkins Press, 1971, pp. 37-72.

42 Aris, Annet and Jacques Bughin *"Managing Media Companies: Harnessing Creative Value"* 2nd Edition Wiley 2012

43 Noam, Eli M. *"Winners and losers: Industry Structure in the Converging World of Telecommunications, Computing and Entertainment."* Mobility. 2006.

Fundamental Characteristic #6 Of The Internet Economy: The "Reverse" Cost Disease

For a long time, the income in creative industries has risen, even though productivity has not. This impact is known as the "cost disease," a term coined by William J. Baumol and William G. Bowen.[44] The "cost disease" phenomenon seems counter-intuitive. In the long run, workers' real incomes rise due to their rising productivity. This raises incomes across the economy. One must therefore pay low productivity occupations, like creatives in media, more than before, because they now have better-paying alternative opportunities. These increases in the cost of production may offset the cost savings from any technical progress in those creative activities.[45] Thus, workers in occupations experiencing no growth in labor productivity at all nevertheless receive higher wages as a result of increases in productivity in other sectors of the economy. The labor-intensive performing arts thus become relatively costlier to produce, thus showing low productivity. And yet, the people employed in these activities actually get paid more than in the past.

But this income growth characterized the past. The same logic now depresses creatives' incomes. As the industrial wages decline relatively, they also affect the creatives' compensation.

Fundamental Characteristic #7 Of The Internet Economy: Instability

As a result of the various factors, the internet economy is more volatile than the industrial economy. It is more subject to economic cycles and greater instability. The dynamics are as follows. An innovative idea raises hope. A boom gets on its way, becoming a bubble. But in a competitive environment, competition drives prices down to marginal costs. Marginal cost is close to zero. Such a price is not sustainable for long. Companies go out of business en masse. Investors flee. The economy descends in a downward spiral.

Thus, the information economy is an unstable economy. And because of Moore's law acceleration of everything, the cycles almost inevitably will accelerate in frequency and maybe in amplitude.

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44 Baumol, William and William Bowen. Performing Arts, T*he Economic Dilemma: a study of problems common to theater, opera, music, and dance.* New York: Twentieth Century Fund. 1966

45 Caves, Richard E. *Creative Industries: Contracts Between Art and Commerce.* Cambridge: Harvard University Press, 2000.

Fundamental Characteristic #8 of the Internet Economy: The Transformation Of Firms Into "Network Companies" Leads To A "Freelancer" Economy.

The economic system based on electronic networks changes the work relations. Firms become organized as networks. They hire by project. They outsource to contactors. They do everything they can to reduce the fixed costs and to shift it to others. An example are the chip making or film production. Most chips today are designed by companies, but not manufactured by them. Sometimes even the design gets outsourced to design bureaus. The same holds true for the Hollywood studios. Most of the films they distribute are made by independent entities, which in turn contract with others for their temporary services. Increasingly, groups of creatives are assembled for projects under an entrepreneurial model. Companies contract workers, consultants, and outsourced vendors.[46] In the same way that "just in time" production has shifted manufacturing capital assets, inventory, and risk to the suppliers of components, so it is now giving rise to "just in time" workers – employees whom a business can hire on a moment's notice to fill a moment's need. [47]

These "just in time" workers have few of the benefits that traditional employees have gained over time. No health and safety protections. No retirement plans. No overtime pay. This organizational model has the potential to become the model for the mainstream firm of the future, given its project-oriented, fluid management structure, flexible skills deployment, and reduction of fixed costs.

Consequences for Media Management

Is it realistic for internet managers to think that they can avoid these issues? That they can take credit for anything positive that is happening, from democracy to new taxis, but that somehow the negative things are someone else's fault?

In their reactions and actions, there are two tracks for internet companies'. As profit maximizing managers, they will inevitably create value and wealth, but also be part of creative destruction. Outside of noble but superficial philanthropic and socially responsible actions for, e.g., the environment, they cannot avoid being part of the fundamental forces described above. If they are successful, they are also part of displacement. They must help society to cope with the problems of which they are a major part, either through their own efforts, or by designing and supporting governmental efforts.

As a first step, they must understand the environment in order to function in it.

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46 De Vany, Arthur. Hollywood Economics: *How Extreme Uncertainty Shapes the Film Industry*. New York: Routledge, 2004, pp. 231-254

47 http://www.dol.gov/oasam/programs/history/herman/reports/futurework/execsum.htm

Expect A Return Of Unionization

To create employment benefits for the new type of employees, labor unions in the freelance tech sector are likely to emerge, following the model of unionization of creatives in theater, film, and music. Since it is difficult to strike when the work can be easily outsourced to offshore locations, the most likely strategy will be that of political pressure and legislation.

Expect A New Wave Of Political Disputes And Activism In The Internet Economy

Income and employment issues are part of a much larger discussion over the control of information resources. This includes advocacy for unimpeded access of content to the internet ("net neutrality");[48] the "open source" movement that battles Microsoft;[49] the "copyleft" community that challenges copyright systems that favor media companies;[50] the privacy protection advocacy against the use of personal information by marketers and governments;[51] the peer-to-peer file sharing, which has moved beyond financially convenient piracy to an ideology on cultural creativity;[52] the "open innovation" concept of user-based technology communities that has challenged the traditional proprietary R&D system;[53] the "unlicensed spectrum" initiatives that seek to undermine the exclusivity of access to airwaves of broadcasters and wireless providers;[54] the push against a "digital divide" that is based on income, skills, and geography;[55] the move to municipal and free wi-fi connectivity challenging phone companies;[56] and more. All of these developments have their particular reasons but also a common thread. They are manifestations of a wider conflict over the extent and nature of control in the information society.

Most observers are familiar with the various flash points but have not always connected the dots and recognized the emerging social movement on the model of en-

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48 Wu, Tim. "Network Neutrality, Broadband Discrimination." *Journal of Telecommunications and High Technology Law 2* (2003): 141.

49 Raymond, Eric. *The Cathedral and the Bazaar: Musings on Linux and Open Source by an Accidental Revolutionary.* Sebastopol, CA: O'Reilly Media, 2001.

50 Stallman, Richard. *"Reevaluating Copyright: The Public Must Prevail."* Oregon Law Review 75: 291-97 (Spring 1996).

51 Rotenberg, Marc. *Privacy & Human Rights.* Washington DC: EPIC, 2006

52 Noam, Eli, and Lorenzo Pupillo, eds. *Peer to Peer as a Distribution Medium.* New York: Springer, 2008. Benkler, Yochai. The Wealth of Networks: How Social Production Transforms Markets and Freedom. New Haven, CT: Yale University Press, 2006.

53 von Hippel, Eric. *"Democratizing Innovation".* Cambridge, MA: MIT Press 2006.

54 Noam, Eli, *"Spectrum Auction: Yesterday's Heresy, Today's Orthodoxy, Tomorrow's Anachronism. Taking the Next Step to Open Spectrum Access."* Journal of Law and Economics 41, no. 2 (October 1998): 765–790.

55 Mossberger, Karen, 2003. *Virtual Inequality: "Beyond the Digital Divide".* Washington, DC: Georgetown University Press, 2003.

56 Lehr, William, and Lee McKnight. *"Wireless Internet access: 3G vs. WiFi?"* Telecommunications Policy 27, no. 5–6 (June/July 2003): 351–370

vironmentalism. For years, information companies and governments have touted their activities as the key to the planet's economic and cultural future and the solution to most of its problems. No wonder that control over this sector is being contested by more than business competitors. As the information sector permeates society, society in turn permeates the information sector with its internal and international conflicts.

Expect A New Wave of Government Policies

Given these fundamental economic and technological drivers, it is almost inevitable that the economic equilibrium of the internet economy, left to itself, will not be at a level of diversity and employment that many people consider necessary. Recent decades have led to a reduction of regulatory restrictions and interventions because of the expectation that technology and market forces would overcome inequalities in democratic societies. If this hope is not realized, the pendulum will inevitably swing back to various interventionist approaches of regulation, breakups, and subsidization, promoted by the various activist initiatives described above.

But governmental actions are becoming more difficult. Government rules worked barely well on the operational level when industries were simple and tools of control existed. But the government's powers today are much more limited. If Google has significant market power in Argentina, how should or could the search engine market there be restructured? If a Korean firm is dominant in interactive games, what then is the Swedish (or the EU's) government's remedy? If Skype's voice quality declines, who would deal with that, if at all, and how? And these are merely conceptual questions, to which are added those of politics, litigation, international trade, intellectual property rights, and international enforcement. It is always difficult for laws or regulations to modify fundamental transitions of industries. It is particularly difficult to do so where, as in the case of media infrastructure of the internet, any policy in a free society needs to be done with a light touch.

Do Something Directly

Internet managers need to contribute directly to overcoming some of the dislocation effects they have created, or else they will find themselves regulated in unfavorable ways. This goes beyond a PR-driven philanthropy. They should channel their talent, creativity, and problem solving skills to help those on the losing side of the equation. On the educational and skill side, they should contribute to STEM education, and send some of their best and brightest to teach it. Train older people. It is disgraceful how the internet sector first marginalizes older folks, makes fun of them, leaves them destitute, and does not lend a helping hand.

Stop Claiming To Be The Solution

The least productive way for the IN managers is to try to take advantage of a problem they helped create, by proclaiming that they should receive more help, more governmental support, less regulation, more access, etc. and everything will be fine.

Stop Arguing That Observing The Problem Is Anti-Technology Luddism

Every time there is a technology shift, there are doubts and fears. Throughout history, technology has been a job creator.[57] But that did not help those that had been dislocated. In the Industrial Revolution, which proceeded at a much slower pace, millions of Europeans were pushed into sprawling city slums or emigrated to distant shores. Social and political revolutions and upheavals abounded. Now, the pace of dislocation is even faster. And the problem might be deeper. As the MIT study by Brynjolfsson and McAfee argues:

> *"The pattern is clear: as businesses generated more value from their workers, the country as a whole became richer, which fueled more economic activity and created even more jobs. Then, beginning in 2000, the lines diverge; productivity continues to rise robustly, but employment suddenly wilts. By 2011, a significant gap appears between the two lines, showing economic growth with no parallel increase in job creation."* [58]

Recommend, Support, And Finance Governmental and New Community Actions

What might such governmental strategies be? This is a big topic, and for another time. Foremost, it should be the retraining of the work force. It should become easier for people to obtain new skills. One proposal: let people over 40 take time off –say a year every decade—to retrain. This would be funded – tuition and living expenses—by the Social Security system (or other pension arrangements elsewhere). In return, the retirement benefits for the person would kick in later. For each month of retraining 'sabbatical', that person's retirement date would go up by one month. This would approximately fund such a system. There should also be required job training during an

57 Pew Research Center, August 2014, *"AI, Robotics, and the Future of Jobs."* http://www.pewinternet.org/2014/08/06/future-of-jobs/

58 Atkinson, Robert D. *"Stop Saying Robots Ares Destroying Jobs – They Aren't."* MIT Technology Review. 3 September 2013. http://www.technologyreview.com/view/519016/stop-saying-robots-are-destroying-jobs-they-arent/

unemployment period where public benefits are received. There should be free online or part time training courses with certifications. And there should be mandatory and higher requirements for STEM courses in both secondary schools and college, and more vocational training. College degrees should have required dual majors: one in a 'practical' area, and a second one in any other area.

A second major governmental strategy is to target and support those industries that are more stable. These tend to be local in nature rather than global. They are, in particular, industries that deal with the body, with the home, with maintenance, and with hospitality and leisure. Some jobs are still beyond the reach of automation and outsourcing, such as construction work, jobs with unpredictable patterns, jobs requiring dexterity and judgment; jobs for small batches, or with numerous variations;[59] and jobs that require an understanding of human nature.

To conclude

The impact of internet-induced economic job displacements in developed economies will not go away. It will get worse in the short term. This creates a challenge to managers in the internet sector. The internet community and the academic community are full of problem solvers and of out-of-the-box thinkers. And such thinking is what we should be doing. Otherwise, a backlash will create forces that restrict innovation. It is therefore important for academics, public-policy analysts, NGOs, companies, and governments to think creatively about new approaches to these issues, and to balance the public interest, technological innovation, and financial investment in the emerging environment. The International Media Management Academic Association must be part of that effort.

59 Markoff, John. *"Skilled Work, Without the Worker,"* The New York Times. 18 August 2012. http://www.nytimes.com/2012/08/19/business/new-wave-of-adept-robots-is-changing-global-industry.html?pagewanted=all&_r=0