Managing at a Distance: Setting the Groundwork

by

Tom Coughlan

Mercy College

Abstract

For several years I have been looking at the issues surrounding the need for, and the management of remote workers. This paper looks at some of the environmental factors driving the need to rethink our team and organizational development. The principles here are some of the foundational elements for a book that will be discussing changes in our management of remote workers, and how we think about our organizational structures. This article is intended to be the first in a series that will be further developed in a book on the subjects discussed here.

Keywords: Remote Management, Organizational Structure, Organizational Change

It's March 16, 2020, I step out of my office to find my daughter in-law uploading a play list to the Amazon Echo in our living room. Inspired by some dark humor, the first of her apocalyptic playlist begins to fill the room – The End of The World as We Know It by REM. A fitting anthem for the new era – or at least a new social and business reality. Like many families we had hunkered down early on. As soon as we began to realize how serious the Covid-19 crisis had become, my wife and I invited my son and daughter in-law to decamp from Brooklyn to our home in CT. Fortunately, my son and daughter in-law were on family leave from the birth of my new grandson - so fast action was not a problem. As for myself and my wife, the universities where I teach had gone completely online, and my wife works from home. So not going into an office, or public gathering place, was not necessary.

I was no stranger to working remote, you might even say I was an early adopter. My first job out of college was as a field marketing rep for Atari, back in the early 1980s. Before becoming a full-time academic in the mid 2000s, I spent about 25 years in the technology industry - of which about twenty years were on the road in different sales, marketing, management jobs, and as an entrepreneur. And, when I did start teaching it was as an online instructor. Even thought I have continued to teach online to this day, by 2006 my teaching portfolio had become weighted more to the traditional classroom. This however was a new world. I am now a tenured professor, and I teach at several other schools as an adjunct professor. But, by the second week of March 2020 all my teaching had move online temporarily as the universities tried to deal with the global pandemic.

I had started thinking about writing a book on remote management at least two years before the crisis, and over a year pre-crisis had contacted my writing partner David Fogarty to get his thoughts on the idea. Our calendars were full, but we agreed the whole field of remote management had some real issues for managers to be concerned about, and these issues would only become more important over time. So after roughing out the core concepts, we contacted a couple of colleagues - Gary Bernstein and Lynda Wilson - to help by writing a couple of the chapters, and slowly began to piece together our project.

It was clear to us we had entered a new world order. Geographically dispersed teams, global centers of excellence, Freelance and Contingent Workers, and working from home . . .Simply put, the world of business has changed – and in some cases radically. Many of the organizational structures, and the management principles used to develop or current processes, policies, and decisions, were built for a different age, with a different population, that had a different set of motivating factor. This has caused some progressive managers to reevaluate how they should be organizing their institutions, and motivating their teams.

Increasingly companies and individuals are finding their ability to compete in the marketplace requires the development of broader networks of people, resources, skills, and capabilities then ever before. In addition, there seems to be a need to engage the people that embody these skills and capabilities in very different formats. We are moving away from simply hiring these people and are moving towards gig economies, partnerships, and loose organizational affiliations. The lines of where the organization

begins and ends have become a little grayer or softer – which has lead many traditional managers to be confused and disoriented.

Complicating this further is it seems harder to centralize these resources. Employees are increasingly finding it desirable or necessary to work at home, or in a remote location – and this desire seems to increase with the level of skill and education of these employees. Prior to the Covid Crisis a study by the US Bureau of Labor Statistics (2018) revealed 46 percent of workers with advanced degrees worked from home regularly, where only 32 percent of those with a bachelor's degree, and only 12 percent of those with a high school degree did the same.

In order to capitalize on global markets, and key pockets of intellectual capital, we find our organizations creeping outward – slowly developing geographically diverse pockets of skills and resources. An indication of the volume and importance of this global integration would the level of Foreign Direct Investment in the US in 2018 which exceed $256 billion, and supported of over 7 million US jobs (SelectUSA.gov, 2018). This diaspora is complicating coordination of day to day business processes by adding the factors of distance, time zones, national culture, and Geo-political issues.

Most importantly our book is all about actionable strategies – based on evidence and experience. It looks to help managers recognizing the environmental factors -business, technological, and political– that are affecting the need for change. Helping them focus on defining the scope of the issues underlying the environment, and also enabling them to develop a rational plan to deal with the current issues – as well as being agile enough to position themselves to meet the challenges of an environment which has an ever increasing rate of change.

Over the course of the book we will develop strategies for developing new more relevant strategies in a number of areas, including:

- Developing new organizational structures better suited to our industries, and organizations
- Work habits that are in line with the new reality focused on autonomy and effectiveness
- Capitalizing on clusters of industries and capabilities (or Porterian Clusters)
- Developing analytics to measure our progress and deploying those analytics effectively
- Understanding the role of virtual proximity and its role in the information flow
- Developing HR strategies that address the new set of issues
- And the big picture implications of all of this as we move forward

We will be looking at the sort of changes that affect an organization's ability to compete as we move forward. This means we will look not only at the broad technology infrastructure, but also at the social, demographic, geo-political, economic, organization structure, and the required skill changes that affect the efficacy of organizations as a whole. Also, as we develop this book sections will appear in this publication as a sounding board to help us develop our ideas.

Time Marches On – Toward a Remote World

Of course the practice of setting up remote locations is nothing new; however, since the publication of Tom Friedman's (1999) *The Lexus and the Olive Tree* managers have become increasingly aware of the acceleration in the rate of change, and that this acceleration may present some new challenges. And according to the recent *Harvard Business Review* articles Ghemawat and Altman (2019) in the two decades since Friedman's book the problems has only become more severe. The measures and global connectedness, such as the DHL Global Connectedness Index, have shown significant increases even the the face of increased nationalism, protectionism, and tariffs. It is clear that time is moving forward, and - in a Schupeterian wave of creative destruction - the world is changing.

However, it is not only about organizations spreading it's people across the global map, or global pandemics making co-presence impossible. Is it also about the cultural, educational and societal changes which inhibit the engagement of employees, and the creation of effective methods of sharing information. Later in the book we will look at strategies based on the concepts such as Petland's (2014) *Social Physics* that help organizations leverage the flow of information, and Myer's (2014) *The Culture Map* outlining differences in national, and how they need to be considered if we are to maximize our effectiveness.

The theme *time marches on* certainly is not a new one. In each era it is common for the older generation to lament the good old days, as most of the younger generation to herald the coming of the new. Nothing has changed but the speed and the scope of change itself. In the history of economics there were brilliant figures such as Thomas Robert Malthus who believed that mankind's economic potential fluctuated within a fairly limited range. That economics were driven by some key limiting factors like food production. In his classic *An Essay on the Principle of Population* published in (1798) Malthus believed that populations could grow geometrically, but food production could only grow linearly. This meant that if food production grew living conditions would improve and the population would grow. The result being a dropping of the amount of food available per capita. He also believed that wars, famine, disease and other social phenomenon would occur to bring the economic health and population back to stasis.
Prior to the industrial revolution changes in the business environment were extremely slow, and were often restricted, in Malthusian fashion, to a relatively narrow band. The moment that mankind discovered how to leverage key technologies (e.g.: Steam Power) those former barriers were obliterated. The Malthusian models were no longer relevant. In the modern era, futurists such as Toffler in his book *Future Shock* (1970), shook the world with descriptions of how the improvements in education and communications reshaping our models of what was possible in the not too distant future. He predicted dramatically increased the speed of change, and how this trend toward more rapid change

would accelerate over time. About a decade ago Richard Florida in *The Great Reset* (2010) suggested that the speed of change is such that you no longer see changes developing slowly over time. Many of the important changes we are facing are more of a reset than a progression of our world's economic, technological, and social structures. It's also becoming clear that none of us are immune to these changes. Businesses and industries that were once titans and considered stable have disappeared sometimes almost over night (e.g.: Kodak, Blockbuster, Toys-R-Us, Boarders, . . .). There was a time when a company reached a certain size, and gained a certain level of market presence, it was nearly impossible to displace them; however, that is no longer true. In the middle of the 20th century if your company was large enough to make the S&P 500 or the Fortune 500 your tenure was likely 60 to 75 years. In the 21st century that tenure has shrunk to likely be between 15 and 20 years – and it's dropping quickly (Brown, 2018).

More recently many managers had a reset to their thinking relative to remote workers, or work from home, when the world was introduced to the global Covid-19 pandemic. Many managers who up until that point had resisted such working relationships were introduced to a new reality – one in which *remote* or *work from home* structures have moved from unnecessary, or an interesting curiosity, to a critical element of the organization. This was a wake-up call and a shock to the systems of many organizations. Many employees and managers were forced for the first time to deal with a very different set of communications and work processes. The applications were foreign, the etiquette of the online world was foreign, and how you managed a team was foreign. For many this was akin to being thrown into the deep end of the pool for the first time. It immediately identified a number of inadequacies in organizational preparedness that had to be confronted in this new world order.

As managers survey these changes they will likely see a number of implications for their organizations, and their careers. High on their list will likely be items such as diversity, work-life-balance, the need for innovation, and even their resilience in a crisis. Today in addressing these needs many organizations find themselves spanning multiple geographic locations, time zones, and industrial commons – disrupting the information sharing and cultural norms that have gotten their organizations to this point. These new, or future, organizations will need to find ways to engage and manage workers that are no longer physically co-present. They will need to develop new ways to manage information flows, and tap into a wider variety of resources from a broader set of physical locations.

Fully describing the changes that have already occurred, or which are likely to occur, would take more more space than can be found in a single book. Therefore, our goal is to identify a few mega trends that might help you to reshape your thinking and identify some of the important trends or changes which specifically affect your organization.

EDUCATION

Toffler was among the first in the modern era to recognize this massive shift in the speed of change. Starting with Future Shock (1970) and continuing with several other best sellers, he identified several critical factors, that given time, had changed the structure and pace of life, work , love, and the economy. Among the critical elements are education, communication, and transportation. The growth in education, and access to information and communication technology (ICT), is shaping the growth and availability

of information – and has shaped how we process information into change. So it follows that as we increase the level and accessibility of education and ICT we increase the level of innovation, shorten product life cycles, reduce the cost of innovation, increase the depth and breath of product lines, and often narrow the target markets for future products. The pace of this change, and its organizational implications, are currently significant issues.

According to the US Census Bureau (2020) in 1940 only about 19.6% of the adult population had earned a high school diploma, and only 4.6% earned a bachelor's degree or higher. In contrast, in 2018 about 54% of the adult population had earned a high school degree, and about 35% had a bachelor's degree or higher – approximately a 760% increase in only a couple of generations. And, the changes in other countries have been even more dramatic. In 1964 about 65% of Chinese adults had no education at all (Schrader & Cramer-Flood, 2012). However, by 2019 about 67% of Chinese adults between the ages of 25 and 34 had entered tertiary education (post high school – trade schools, colleges, and universities) – which is 2% higher than the average for OECD countries (OECD, 2019). In general as we look at data on the level of educational attainment there is a clear upwards growth trend, and the trend line is getting steeper. Based on the works of Toffler, and many other researchers whom have continued to explore these trends, it would seem there are some clear implications for managers. These trends are like snowballs heading down hill they will pick up speed and volume and they go. This in turn will mean even greater change at a faster rate. More educated employees would also seem to lead to greater productivity and higher levels of expected autonomy. Therefore, there will be a need to reassess our own expectations of employee responsibilities, and the structure and style in which we manage. It is likely we will see more autonomous or semi-autonomous teams, wider spans of control for managers, and more transparency within organizations.

LIFE EXPECTANCY

It is no real news that people are living longer, that the birth rate is dropping in most developed countries, and that we are clustering in cities. What is important is the scope of the changes and their affect on our organizations.

According to the the United States Centers for Disease Control and Prevention (2019) the average life expectancy for a US citizen in 1900 was 47.3 years and if you made it to 65 years of age you were expected to live about another 13.0 years. By 2017 US citizens were expected to live to 78.7 years, and if they made it to 65 they were expected to live another 19.4 years. And according to the national institute of health those with higher levels of education are likely live far longer than the national average (Hummer & Hernandez, 2013). Another significant factor in life expectancy is level of education. There have been a number of studies that have concluded that life styles and behaviors promoting longevity improve with educational attainment (Kaplan et al., 2015; Sasson, 2016). Give the that knowledge that there is a trend toward workers obtaining higher levels of education, and most are many are moving into less physically demanding jobs, jobs that might have less of an affect morbidity, we can safely assume most will live into their middle 80s. Which means they might live as much as thirty years past the traditional retirement age.

Similarly if we compare the birth rate in most developed countries it is dropping – and in many cases this drop is dramatic. In Japan the government is predicting that current population of about 126 million will drop to approximately 50 million by 2115 (Statistics Bureau of Japan, 2020). In the US the population growth rate has gone from about 1.7% in 1960 to about 0.7% in 2019 (World Bank, 2020).

It would seem increasingly clear that on several fronts the standard retirement age of between 60 and 65 would seem out of date. Individual who might have to consider issues such social connection, a desire to contribute, and possible financial need (out living their money). Many workers may not need or desire full time work; however, it would seem reasonable that some part-time / seasonal / or on demand contingent working relationships may be required. There are also the needs of organizations to consider. Many organizations will likely find it increasing difficult to fulfill their staffing needs from a shrinking pool of candidates – and a demographic cluster of older candidates might provided the vast pools of skilled and experienced workers they need.

DUAL INCOME HOUSEHOLDS

Social expectations surrounding work has changed as well. Historically in the in most of the world men have taken the head of the household role. This of course has had a number of workforce implications. One of these was the makeup of the working population. Well through the middle of the twentieth century, the American dream included a man going off to work to support his family financially, while a woman stayed home to care for children and manage the domestic issues. This of course saw dramatic changes which could probably trace its origins back to woman's suffrage and accelerated with the woman's movement that began to take shape in the 1960s and 1970s. In the US participation of woman in the workforce has gone from 32% in 1948 to approximately 57.9% in 2020. For context, just prior to the Covid-19 crisis the participation rate for all American adults was about 63% (BLS, 2020). Further if we look at couples, in 1967 approximately 43.6 of American house holds had both the husband ad wife working. However, today approximately 70% of house holds are currently dual income, and even in households with children under 18 of those 63% are dual income. An associated trend is that 57% of workers today have some sort of flex time option available from their employer (Bureau of Labor Statistics, 2019), and why 54% of workers say they would leave their jobs for one that offered flexible work options (Gallup, 2017).

Why has flex time become so important to the average worker? Some might wonder if this is simply a increasing feeling of entitlement developing in younger employees, which has been fostered by a growing number of helicopter parents which developed over the past few decades. That may very well be a contributing factor. However, it seems fairly clear from the data that there are few 50's style *June Clevers* left – the stay at home moms that dutifully handled all the issues on the domestic front – and were willing the pick up and move at the drop of a hat when the career of their spouse required it. Working adults face a series of issues that their counterparts in the 1950 did not face – at least not the the level they are facing them today. The modern reality is that both spouses are likely working, making a number of domestic responsibilities far more complicated to navigate. These would include things like child care and elder care – issues that can be tremendously easier with flex time. In addition, if your spouse is working, the domestic

negotiations and logistics around moving to a new city become far more complicated. Therefore, it might be harder to get the available talent to have the same geographic presence.

Technology and Communications Norms

I think most professionals have a sense that technology has had a significant change on how we work and process information. On a day to day basis we might not recognize it. However, if we were to stop an reflect on the significance of the changes over the last four or five decades, the changes in technology, and business practices they support are breathtaking. Having personally spent a career in technology, I was on the front line of change. I enjoy sharing some of these changes with my students. The reactions are often priceless. Today's undergrads grew up with broadband at home so asking undergrads about things prior to 2000 is often akin to asking questions about ancient Greece.

For example, early I my career I was a product manager for floppy disks. Just for fun, I will occasionally bring up a picture of these products in support of a class discussion. I have run into entire classes who were not sure what they were, and how they were used. Even my grad students often have a limited perspective. With them I'll swap out floppy disks for a slide rule. This is often done with a story of how my dad, who worked in real estate finance, and had a slide rule he kept in a leather case. It was something he carried to work every day when I was a kid. I believe I was in middle school when my dad finally swapped out the slide rule for a calculator, and I was at the end of my college career when the calculator was replaced with two of the first 3,000 IBM PC's (one for the office and one for home).

When I share with my students how much they cost - and what you got for your money – most students nearly fall out of their chair. The spec for the original IBM PC included an eight bit processor that ran at about 4.77 mhz, with 16K of memory (not gig or even meg - K), and a text only monitor. There was no hard disk – it came with two 160k floppy drives. Typically you would have one floppy drive for the application, and one for data. Given the storage capacity – even with the simplest application often required that you flip floppies in and out as you loaded an unloaded different parts of an application. To allow enough workspace to run his spreadsheet application (Visicalc), we upgraded my father's machines from 16k to 64K, and added a wide carriage dot matrix printer. So his computers cost a little more than the standard (but either way we are still talking about a pretty anemic machine). If I remember correctly my dad paid about $10,000 each computer and printer combo (in 1981 dollars).

As anemic as these machines were they were well worth the price. They changed the very nature of my father's day to day activities. In the days of slide rules and calculators he we do financial projections on real estate projects, that could span decades, by using large sheets of paper lined with rows and columns to create cells – the kind old school accounts used for ledgers. I can remember him laying them out on the dining room table calculating and filling in each cell (where a row and column met) by hand. This was mind numbing and grueling work. There was always a fear of making a calculation error – especially in at the beginning of the project. And, of course accounting for potential changes in a constant - like a change in the interest rate – meant hours or days of

redundant work. So in many cases it was impractical to account for all the what-ifs that entered the mind of an analyst or investor.

Another significant problem was access to a machine. Back I the 1980s if you had a computer in your office it was often shared by several people. The top uses were for word processing, and spreadsheets. The vast majority were of machines did not support graphics of any type – they had text only screens. Most printers produced documents of far lower quality than a typewriter. And most importantly they were stand alone devices – the internet was created in 1969, but was only used by universities and government at that time.

In the early 1980s inter-office or team communications were done in memos – the paper kind that were hand carried by the mail room staff from your physical outbox to the physical inbox of the recipient. By their nature they took far more time to produce an distribute. So the expected response time correspondingly slower as well. The same was true with external communications. In the slide rule day my dad was based in New York and managed a West Coast real estate portfolio for Metropolitan Life Insurance Company. When he leased commercial space, lease negotiations would take weeks. The original contracts were typed in New York and sent out First Class US Mail (the kind with stamps and envelopes) to the West Coast client. The client would mark up the contract with proposed changes, typically with a pen, and mail it back. Often it would take several rounds of mailing back and forth before a final contract was retyped and agreed to.

More progressive companies were using some rudimentary email systems by the mid 1980s, and home fax machines had begun to enter the market around the same time. However, the primary form of communications for remote workers was the phone – and at the time that meant landline phones. In the 1980s cell phones were available but they were expensive, coverage was sometime spotty, and there were roaming charges (which were sometimes prohibitive) if you were not on your home network. People in the field often used payphones – and carried phone cards. For those readers too young to remember, phone cards looked like a credit card and had an account and PIN on the card. By dialing a series of numbers users could use these phone cards to make calls and charge them to their account. Typically they were used by traveling professionals to make calls from payphones, hotel phones, or even a phone at a customer's office.

Given the logistics of connecting by phone with people in the field, in many industries taking a day or two to return a call was considered normal and acceptable. It is also important to remember that there was no texting, and no portable email. If it were critical that you be reachable when out of the office some professionals took to using pagers. These were devices small enough to fit in the palm of your hand and were about as thick as a deck of playing cards. They were typically worn on the hip and if called would display a phone number of the person trying to reach you. In the beginning pagers would display the number of the person attempting to contact you. Later models ,which came out in the 90s - such as Skytel, would allow for two way texting.

By the late 1980s commercial internet service providers (ISPs) began to appear. Large organizations could high speed connections to the internet within their main offices. However, smaller organizations, professionals in the field, or home users were typically

required to dial in using a modem over telephone lines. These dial-up systems were painfully slow by today's standards and limited in the types of content they could effectively handle. It wasn't until 2005 that there were more homes using broadband than dialup connections, and 2007 before more than half the homes in the US had a broadband connection. Even then only about thirty percent had WiFi (Pew Research Center, 2004, 2008b, 2008a).

Over the past 20 years internet usage has gone from about fifty percent of adults to about ninety percent of adults. And internet use in the home has gone from about one percent to about seventy five percent (Pew Research Center, 2019). The growth has been dramatic but in may cases it has out stripped our ability to process these changes. This is particularly true of managers who may have developed they management processes a decade or more ago. Some may have joined the when paper memos were the prevailing method of communications. They now find themselves in a world where the vast majority of companies are using an internal social tool such as Slack, Yammer, Google Chat, Flock, or Microsoft Teams to handle most if not all of their internal communications (Leonardi & Neeley, 2017).

Social Physics

It has become clear that understanding the flow of information and capitalizing on that flow inside and outside the organization will be come a critical success factor. Alex "Sandy" Pentland of MIT has written a series of ground breaking articles and books on a concept he identifies as *Social Physics*. Pentland looks in to how we work together as teams, discover and share information, how we develop cultures, and what foresters innovation. Important in Pentland's work is how information flows. These flows occur from outside the group to the group members, and within the group between group members. A healthy flow of information is necessary for the overall success of groups (Pentland, 2014).

Pentland outlines how the flow of information and ideas affect behavior, and how these results can be predicted to some degree over time. According to Pentland "social physics is about how behavior is driven by the exchange of ideas - how people cooperate to discover, select, and learn strategies and coordinate their actions - rather than how markets are driven by the exchange of money" (Pentland, 2014, p. 16). To accomplish the exchange of ideas they form social connections and organizations. However, just having an organization does not guarantee a healthy flow of information – often through corporate structure, social pressure, and culture information flows are limited creating echo chambers and filter bubbles negatively affecting the quality of the work and innovation within the group.

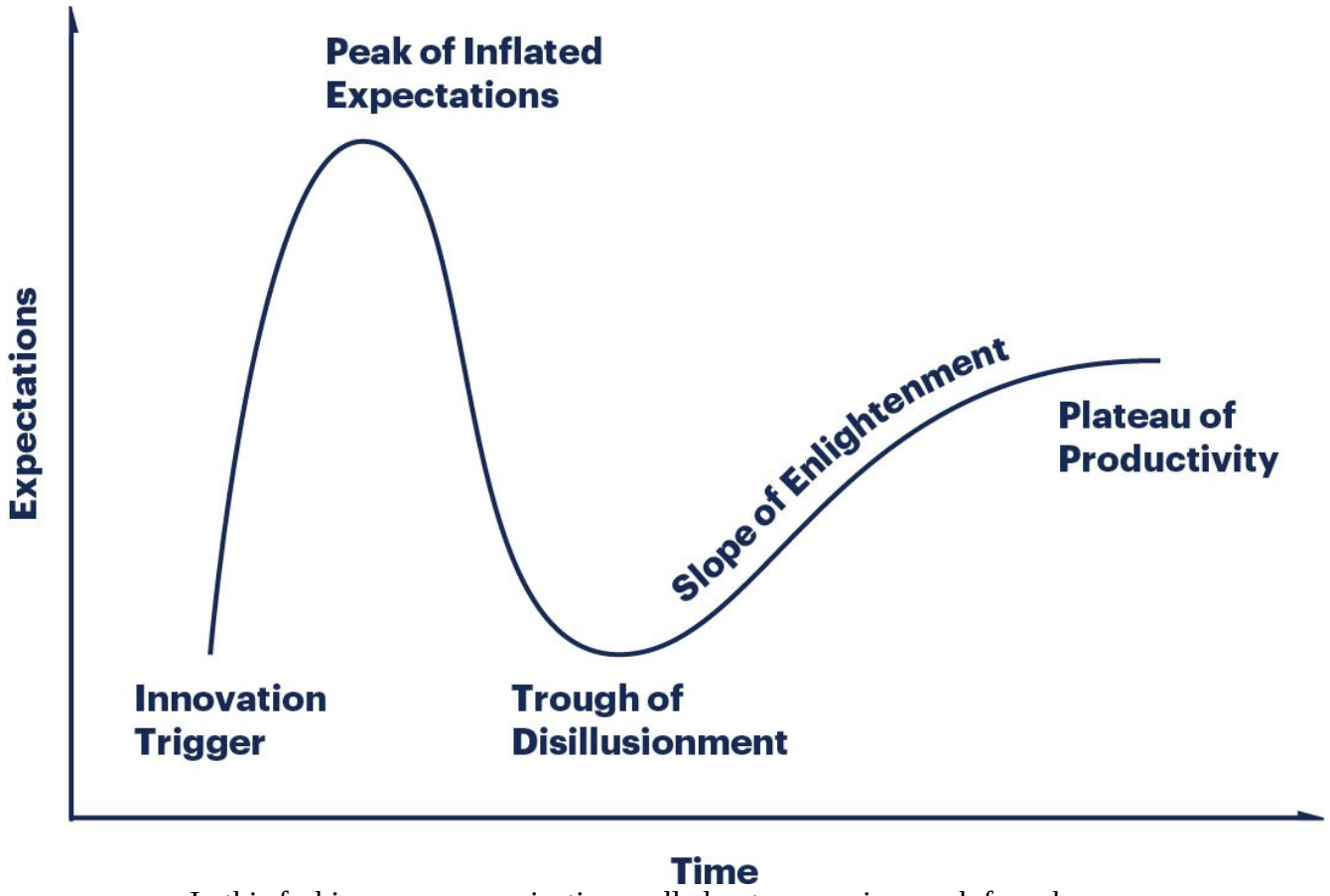
Culture

Culture is something that managers often speak about but is very difficult to define and even more difficult to measure. From a business perspective managers should be concerned with culture at several levels. There is national, regional, organizational, and even team culture to consider. At a national level there has been several attempts to measure culture. Two leaders in this area would Geert Hofstede, former IBM researcher

and Professor Emeritus at Maastricht University in the Netherlands, and Erin Meyer, a Professor at INSEAD in France. Both have developed metrics from which to measure national culture an compare the disparities. These can be extremely useful when attempting to understand where messages, ideas, or organizational policy could have gotten lost in translation. As organizations begin to spread across the globe these concepts provided by Hofstede and Meyer, and their associated frameworks, become increasingly important.

Macro cultural trends are difficult to understand and deal with, but in some ways micro trends are worse. There are few frameworks that the average manager has that effectively deals with micro cultural issues – and as many managers in 2020 have realized these micro cultural issues become extremely relevant as we begin to work remote from other members of our team. Micro culture is affected by a number of organizationally specific variables. As these variables change there is often a correlative change in the culture – and these changes are not always for the better. Without the ability to observe many of the day in and day out interactions within the team cultural changes are far more difficult to identify and monitor.

Early adopters of ICT technology in the the 1990s and early 2000s saw a vision for what the workforce of the future would look like. Looking back it would seem far too many were caught up in the Gartner Hype Cycle (Gartner Group, n.d.). This model outlines how many professional can get overly excited about the potential of a new technology – often imagining it to have far more capabilities than it does. This may result in aggressive plans that fall flat when expectations hit reality. Later as the technology, and the understanding of its capabilities, develops more realistic projects are executed, which deliver significant (if not somewhat more modest) results .



In this fashion many organizations rolled out aggressive work from home programs, and let employees live wherever they chose as long as there was an internet connection; however, reality soon came crashing in. Many soon became came concerned that the quality of organizational culture was declining. This lead to the now famous decisions of in Yahoo 2014 and later IBM dramatically curtailing their employee's ability to work remote from their team - for all intensive purposes banning work from home. In the insuing years there have been some progress in the technologies that support geographically diverse teams, and coupled with the growing acceptance and experience, we are now seeing remote working structures that are far more robust and effective than those from only a few years ago.

Due to the very nature of technology and the rate of change described above, the reality of how remote work and remote management of culture will look in the future is still very unclear. What we can expect is that is will likely change from what we now know. Some of these changes will be based on technology, other will be based on our ability to absorb

the understanding of their capabilities, and even how we can build relationship when the fidelity of the communications are different then being there in person.

Change

In March of 2020, most companies were facing a new reality. In most of the developed world co-presence was not an option, and new ways of working and communicating were being forced on a number of companies and working professional. In many cases the new tools could have been implemented earlier, but there seem to many to be no compelling reason. Over the years most professional had some familiarity with with simple video conferencing or video chat tools – e.g.: Skype, FaceTime, Facebook Messenger, Google Duo. . . However, most shyed away of suggest they be used on a casual basis in a business environment. Instead, they would use messaging tools with much lower fidelity in presenting a message. Familiar tools like telephones, email, or even texting would be used. Part of this was there were sometimes the lowest common denominator, and other times the lack of familiarity by the other party could cause an awkward encounter, or one could even argue that previous generations of these tools were sometime a little flaky; however, a major factor in the use of these (and just about every) legacy technologies has been momentum.

When studying change in organizations it is often helpful to remember the now classic book by Thomas Kuhn *The Structure of Scientific Revolution (1996).* According to Kuhn "Scientists have a very hard time denouncing paradigms they have been working with for an extended period of time - even when evidence mounts against them. Rarely do scientists drop a theory unless they have an handy replacement" (p. 76). The problem with dropping the ideas that we are operating under is not unique to scientists. In most professions this has been demonstrated to be the case – especially as we increase the stakes.

This might explain why many business processes become calcified. Often a company's business models, processes, organizational structures, and communications practices are stuck in the past, with what seems like no hope of changing. Some of this might be attributed to comfort with the existing process or paradigm, it could simply be momentum, but in other cases it might come down to fear of the unknown. However, increasingly companies are facing situations where their existing organizations are out of sync with the reality they are facing. Yet many managers continue to demonstrate varying levels of cognitive dissonance. Even, as Kuhn has described, when faced with mounting evidence they refuse to accept that the current model is anything less than perfect – or even in need of some sort of update.

Why is there such denial of what might be obvious to an outsider? People become extremely risk adverse when they feel their job, or their career, is on the line. Or as it was famously put by Upton Sinclair "It is difficult to get a man to understand something when his salary depends on him not understanding it". In some cases they are simply sticking their heads in the sand until the issues at hand go away on their own. The unfortunately sometimes when they go away they do so at a heavy price – or even at the price of destroying the organization itself.

A term that often gets used in today's modern military to describe a situation that is degrading towards the limits of a persons ability to cope is called VUCA (volatile, uncertain, complex, and ambiguous). Often as things begin to shift to VUCA the default for many people is to "outsource their thinking to to siloed experts and technologies that can help us optimize choices admidst a data deluge" (Schroeter et al., 2020). The problem with this approach is that at best the opinions of these experts, and expert systems, were formed while dealing with similar but different realities. As George Box famously quipped "All models are wrong – but some are useful". Models are just that models – they are not reality. They are simplifications that allow us to get some perspective on what is happening, and as we generalize these models to meet broader sets of situations, or environments experiencing rapid change, their viability to mirror reality decreases.

Toffler suggested "there are discoverable limits to the amounts of change that the human organism can absorb, and that by endlessly accelerating change without first determining these limits, we may submit masses of men to demands they simply cannot tolerate" (1970, p. 326). In some ways it would be interesting to wonder of Toffler may have fallen into a trap similar to that of Malthus – not accounting for how mankind might leverage his abilities through new and powerful tools. It is important to remember that Toffler wrote this at the very beginning of the computer age. As prescient as he was it might have been hard for him to imagine the types of tools we have today for making sense out of our data never mind the kinds of tools we might have in the future.

In discussing Toffler's point of view, Grady Booch, in *After Shock (Schroeter et al., 2020)* posits that "except for regarding physics – there are no currently discoverable limits to the amount of change that a human can absorb"(p. 34). When developing our opinions we start with what we frame as normal. As we are increasingly exposed to change our tolerance for change increases. In addition, mankind has developed, at an increasing rate, tools which allows us to process the deluge of data we are facing – one only has to look at the analytics business to see this in action. Taken a step further there have been a number of authors who have discussed the coming of human machine partnerships where AI is used in a supporting role to human decision making.

In the late 2010s we saw AI it could be used successfully to augment human decision making. Examples of this can be seen in Freestyle Chess where opponents we allowed to use AI chess applications to help support their play and decision making. Computers would provide a series of options to the players who could choose between the options based on the style and personality of their opponent. In these tournaments AI assisted tournaments, lower level or mid level chess players could potentially beat a grand master. However, the rate of change has become a factor here as well. Moore's Law has reared its head. Over 50 years Gordon Moore noticed that the technology in RAM chips was doubling in capacity while the price fell by about half every 18 to 24 months. Over time people have begun to generalize this law to all technology, and for the most part the law

has held true. When applying this to AI the affects of Moore's Law can be seen in the emergence of Hyperlearning. In the past AI would typically need to be trained by humans the rules of a then game (or how a business process works), and how to make decisions. Hyperlearning systems can be given a minimal bit of information on the problem, and by running endless simulations it can learn on its own how to solve the problem or adapt to changes in the environment.

These systems have had an affect on the viability of Freestyle Chess. In the case of chess hyperlearning systems have advanced so rapidly in their speed and ability they have out classes both human chess masters and humans/machine duos. Philip Gerbert (2018) suggest that this would suggest that humans are becoming a redundant and unnecessary part of the equation, and going forward this trend will only get worse. However, not all researchers see this the same. Chess aside, Johnson and Vera (Johnson & Vera, 2019) suggest that no AI is an island and that the real power will be in teaming with humans. At least for the time being machine ad human intelligence are fundamentally different.

Some may wonder why a discussion of AI here is relevant. It is relevant as an icon of change. If one takes long look at AI today it is not a grand leap to see the potential for disruptive change if any of the current predictions or trends hold true. It would seem to have the potential to disrupt our world to the same degree or more than the internet has over the past few decades.

Moore like Toffler both saw the potential for the rate of change to increase and therefore the models that we have for dealing with this rate of change will themselves have to change. We know from Malthus that we can't domain our thinking and restrict it to fundamental principles we have historically run our lives on. These principles are open to change as key variable that were once constant begin to change. Computers have dramatically increased the volume and flow of information in the past 50 years and this flow is likely to increase – which may lead to human machine partnerships out of necessity for humans to be able to cope with the flow.

Conclusions

For those professionals who stepped back, and have been clinical about the management challenges which we will be facing in the future, the need for geographically diverse teams, or teams that cannot be co-present, has been on their radar for some time now. However, given the resistance to change in many organizations, most did not see something this radical happening quickly. However, that was before Covid-19, and shelter-in-place orders which forced many organizations to choose between remote work or closure - but it would likely have happened even without Covid-19. Technological, demographic, economic, and social changes in recent decades have been pushing business to change their basic structures – as well as rules of internal and external engagement. As we go forward, there will be no pat answers on how to handle these changes, but we can begin to develop new approaches and logical frameworks to process our current environments, and attempt to position ourselves for the future.

BLS. (2020). *Bureau of Labor Statistics Data*. https://data.bls.gov/pdq/SurveyOutputServlet

Brown, B. (2018). *Dare to Lead: Brave Work. Tough Conversations. Whole Hearts.* (First Edition edition). Random House.

Bureau of Labor Statistics. (2018, July 30). *Workers with advanced degrees more likely to work at home: The Economics Daily: U.S. Bureau of Labor Statistics*. https://www.bls.gov/opub/ted/2018/workers-with-advanced-degrees-more-likely-to-work-at-home.htm

Bureau of Labor Statistics. (2019). *Job Flexibilities and Work Schedules Summary*. Bureau of Labor Stastics. https://www.bls.gov/news.release/flex2.nr0.htm

CDC. (2019, October 30). *Data Finder—Health, United States—Products*. Centers for Disease Control and Prevention. https://www.cdc.gov/nchs/hus/contents2018.htm

Florida, R. (2010). *The Great Reset: How New Ways of Living and Working Drive Post-Crash Prosperity* (1st ed.). HarperCollins e-books.

Friedman, T. L. (1999). *The Lexus and the Olive Tree* (1st edition). Farrar, Straus and Giroux.

Gallup. (2017). *State of the American Workplace*. Gallup. https://www.gallup.com/workplace/238085/state-american-workplace-report-2017.aspx

Gartner Group. (n.d.). *Hype Cycle Research Methodology*. Gartner. https://www.gartner.com/en/research/methodologies/gartner-hype-cycle

Gerbert, P. (2018, May 16). *AI and the 'Augmentation' Fallacy*. MIT Sloan Management Review. https://sloanreview.mit.edu/article/ai-and-the-augmentation-fallacy/

Ghemawat, P., & Altman, S. A. (2019). The State of Globalization in 2019, and What It Means for Strategists. *Harvard Business Review Digital Articles*, 2–8.

Hummer, R. A., & Hernandez, E. M. (2013). The Effect of Educational Attainment on Adult Mortality in the United States*. *Population Bulletin*, *68*(1), 1–16.

Johnson, M., & Vera, A. H. (2019). No AI Is an Island: The Case for Teaming Intelligence. *AI Magazine; La Canada*, *40*(1), 16–28.

Kaplan, R. M., Howard, V. J., Safford, M. M., & Howard, G. (2015). Educational Attainment and Longevity: Results from the REGARDS US National Cohort Study of Blacks and Whites. *Annals of Epidemiology*, *25*(5), 323–328. https://doi.org/10.1016/j.annepidem.2015.01.017

Kuhn, T. (1996). *The structure of scientific revolution*. The University of Chicago Press.

Leonardi, P., & Neeley, T. (2017). What Managers Need to Know About Social Tools: Avoid the Common Pitfalls so That Your

Organization Can Collaborate, Learn, and Innovate. *Harvard Business Review*, *95*(6), 118–126.

Malthus, T. (1798). *An Essay on the Principle of Population*. 134.

Meyer, E. (2014). *The Culture Map: Breaking Through the Invisible Boundaries of Global Business*. PublicAffairs.

OECD. (2019). *Education at a Glance—OECD*. OECD. http://www.oecd.org/education/education-at-a-glance/

Pentland, A. (2014). *Social physics: How ideas turn into action.* Penguin Books.

Pew Research Center. (2004, April 13). The Rise of Wireless Connectivity and PIP's Latest Findings. *Pew Research Center: Internet, Science & Tech*. https://www.pewresearch.org/internet/2004/04/13/the-rise-of-wireless-connectivity-and-pips-latest-findings/

Pew Research Center. (2008a, July 2). 55% of adult Americans have home broadband connections. *Pew Research Center: Internet, Science & Tech*. https://www.pewresearch.org/internet/2008/07/02/55-of-adult-americans-have-home-broadband-connections/

Pew Research Center. (2008b, July 2). Home Broadband 2008. *Pew Research Center: Internet, Science & Tech*. https://www.pewresearch.org/internet/2008/07/02/home-broadband-2008/

Pew Research Center. (2019, June 12). Demographics of Internet and Home Broadband Usage in the United States. *Pew Research*

Center: Internet, Science & Tech. https://www.pewresearch.org/internet/fact-sheet/internet-broadband/

Sasson, I. (2016). Trends in Life Expectancy and Lifespan Variation by Educational Attainment: United States, 1990–2010. *Demography*, *53*(2), 269–293. https://doi.org/10.1007/s13524-015-0453-7

Schrader, A., & Cramer-Flood, E. (2012, June 4). *Does China's Newly Educated Population Indicate a Changed Workforce Dynamic? | The Conference Board*. The Conference Board. https://www.conference-board.org/blog/postdetail.cfm?post=704

Schroeter, J., Kurzweil, R., Gilder, G., Rees, M., Gingrich, N., Kay, A., Brin, D., Bronson, P., & Westphal, D. (2020). *After Shock: The World's Foremost Futurists Reflect on 50 Years of Future Shock—and Look Ahead to the Next 50* (None edition). John August Media, LLC.

SelectUSA.gov. (2018). *Foreign Direct Investment in the United States*. https://www.selectusa.gov/FDI-in-the-US

Statistics Bureau of Japan. (2020). *Japan Statistical Yearbook 2020*. http://www.stat.go.jp/english/data/nenkan/69nenkan/zenbun/en69/top.html

Toffler, A. (1970). *Future shock*. Random House.

US Census Bureau. (2020, March 11). *CPS Historical Time Series Visualizations*. The United States Census Bureau.

https://www.census.gov/library/visualizations/time-series/demo/cps-historical-time-series.html

World Bank. (2020). *WDI - Home*. World Bank. http://datatopics.worldbank.org/world-development-indicators/