

Dancing on Quicksand

Understanding and Managing Change in an Age of Uncertainty

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Synopsis

It's a brand new wild and wired world. However, we have a problem. Those who are responsible for making education happen - from the classroom teacher to the principal, school board, the superintendent, parents and the community - have been prepared by, and continue to support a system that was geared for an age that no longer exists. This cannot continue if public education is to survive! This presentation looks at the change-driven de-stabilization of our modern world from the perspective of the personal challenges individuals must face to be successful in a dizzying environment of accelerating change - a world where mindset will be more important than machines. The key to survival both personally and professionally in an age of fundamental uncertainty is to learn how to dance on quicksand - to move quickly before you become mired.

Our goal for today

Let's consider the realities of the new high tech working world and outline some strategies for success in this world of constant change.

The way we were...the good old days

Most of us are children of late Industrial Age. So you remember those days? Do you remember when life was relatively stable & predictable? Let's take a quick stroll down memory lane...

Ted's Dad

Studied Architecture at university. This prepared him for entire career. He worked for the same company for over 30 years in an era of jobs for life.

Life was predictable

There was a discernible pattern to life - one that involved the same, predictable daily routine. Ted's Mom stayed home just like other moms> His Dad turned the corner and drove down the street at exactly 6:00. His family sat down for dinner at 6:15.... There was an incredible steady rhythm to life.

Ian's Dad

Dropped out of school to go to war then went to work for a department store - he quickly

eventually bought a summer place while still saving money to invest in their retirement.

Ted's first job

Ted dropped out of 2nd year university and was able to get a job in a mill within 5 days - the job paid great wages, offered lots of work & job protection from a union.

Ted's brother Mike

Was a service manager for a large Toyota dealership. As was typically the case at that time for middle management, he was solely responsible for his department. He wasn't expected to know about other departments. And he was very good at what he did.

Ted's sister-in-law

She worked in a bank as a bank teller - banks were different back then - do you remember going to the bank? It was open from 10:00 am to 3:00 PM Monday to Friday. Do you remember writing checks and then rushing off to the bank first thing Monday morning to make sure that there was cash there to cover them off? Do you remember when banks were departmentalized with specialists for everything from loans to investing. Gail had a great personality combined with great math skills. As a result, people lined up to work with her one at a time. She was really good at her job.

Ian's first job

When Ian went to school, work was readily available - Ian had summer jobs all through university working on construction. These were steady jobs that, like Ted's job, had great wages & job protection from the union.

Ian's brother John

Finished grade 12 and then got a job in a warehouse for a department store - it was a relatively mindless job in which all he had to do was as he was told and made a good living.

Do you remember post secondary education

Attending and graduating was the very definition of success in our society. Going to college was a guarantee of a good job because if all else failed, insurance companies would hire literally any university grads regardless of their specific area of study

These and many more stories speak to the relative stability of the time.

Then something really weird happened!

Ted's Dad was the GM of a major international construction company - business was doing very well. Then out of left field, at the age 58, and with no prior notice he meets with Board. They tell him that his efforts had made the company what it was ...but their business had changed. They then asked him to clean out his desk

day, out of the blue, he got called into the owner's office and told that he was the very best service manager that the dealership had ever had, but that the company is going through reorganization, that satellites and wide area networks had changed the business ... and so they had to let him go.

Ted's sister-in-law Gail

Gail had been a bank teller for 14 years. Then one day, the manager asked her into his office and told her what a great job she was doing. He told her that there were many customers who actually came to that bank only because she was there - he then informed her that her job had been eliminated because of ATMs, computers, and automation.

Ian's brother John

John had 12 years experience in the warehouse of the same department store his father had worked for - a few years ago he was called in, told that he was a terrific worker, but was that he was being laid off because of automation and roboticization of the workplace. Unlike the others described here, however, he was offered a part time position. Unfortunately it was a job with no benefits and for significantly less money than he had previously been paid. John had little choice... he took the job.

Unfortunately, things didn't stop there - 4 years later he gets called in again, told he was a great worker and then laid off permanently because the automation initiative had been so successful that they had been able to reduce the floor shift in the warehouse from 400 workers to 15 workers with a higher level of productivity than they had with 400 people on a shift.

A sad postscript to this story is that 5 years later, the company that Ian's father had worked for for more than 30 years - a company that at one time was the biggest and best in its field, went out of business

Our friends' children

Have you heard this song before? They graduated from university and then proceeded to move back in with their parents after they graduated because they couldn't find a job in their field of expertise - as a result, they were either reduced to working at a low paying job unrelated to their field of study, had to go back to get a graduate degree, or were forced to attend a technical school or community college to get the skills they needed to qualify for a job.

The "recovery" of the 90's was unusual

What strange times. The economic down turn of the late 80's gave way to the recovery of the 90's. However, this was the first time where there was a return to profitability without a simultaneous rise in employment.

economy - rules that outwardly might seem bewildering & disorienting. So what's going on here?

It's the Law of Change!!

There are significant indications that there are larger forces at work here - we appear to be living in a world where change has become the constant. Even the rate of change seems to be increasing. This has been primarily fueled by the development of a number of powerful new technologies. As a result - life now follows the Law of Change - it's a law that we simply can't ignore.

Change leads to technologically induced instability

As we look around our shiny new world, we see a great deal of evidence that technological development has and is destabilizing the status quo. This has led to completely new ways of doing things as well as completely new way of thinking. As a result of these changes, things that had been valued (for a long time in many cases) are no longer valued. It is this that is upsetting the existing equilibrium.

It's the business of the future to be dangerous. The major advances in civilization are processes that all but wreck the societies in which they occur

Alfred North Whitehead

Three (of several) destabilizing developments

#1 The microchip

In 1969 Ted Hoff at the Intel Corporation developed the microchip. In essence it was a computer on a chip. This development, which was largely unanticipated, has had an enormous impact on our world, in due course fundamentally changing the way many things are done. It must be emphasized that this was not just in one isolated sector of the economy, it was pervasive - changing just about everything, everywhere. Within the framework of this handout, we cannot hope to do justice to all of the different areas that it has impacted, but let's take as an example, just one of many implications - the development of automated systems and robotics.

In management guru Tom Peter's latest book *Brand New You* he talks about the impact of automated systems and robotics on unloading ships. In 1970 - it took 108 workers 5 days to unload a timber ship. But because of the development of containerization systems combined with mass automation, it now 8 workers, 1 day to do same job.

What have smart systems done to the workplace? A couple of examples:

Suddenly because of robotics Japanese manufacturing were able to make little cars with a big

refrigerator from 360 hours to less than 3 hours. At the Chrysler K-Car plant, this allowed Chrysler to triple productivity with half as many workers as previous.

Similar developments changes have resulted in the development of automated inventory systems, effectively putting my brother John (and thousands of others) permanently out of work - making many of them not only unemployed, but hopelessly unemployable. Recently, this has allowed McDonalds to announce that within a few months, you'll be able to get fresh cooked food (untouched by human hands) in less than 15 second using high speed laser cookers combined with ATM-like front ends.

These are just a few of literally thousands of examples. More than anything else, all of these developments have and continue to lead to the elimination of jobs - forever destabilizing the balance between unions & management in the process. Tom Peters suggests that in the next 10 years, smart systems will do the same thing it has done to blue collar jobs to most white collar jobs.

#2 Networks

The interconnection of things which were previously unconnected tends to create a new synergy. Just consider for a moment what effect the development of the electrical grid, the interstate highway networks and the telephone networks have had on America. Each in their own way resulted in rapid and massive changes in where, when & how we worked. Now consider computer networks and advances in telecommunications that resulted from new chip technology. In the course of 10 years we have seen the progression from stand-alone systems to worldwide inter-networking. Today literally anything can be connected to anything else digitally. This development and many others like it have profound implications for all of us.

As an example, consider the effect that wide area networks have had on banking. The emergence of ATM's lead directly to the loss of tens of thousands of jobs, including the one that Ted's sister in law had. We are seeing a similar impact on the communications systems and post office as a result of the emergence of e-mail & the World Wide Web - from operators, to clerks, to travel agents, to salesman and realtors - many of our assumptions about the world have been rocked. Do you remember the speed innovation of the 80's, the overnight letter? Now we only use the US Snail when we're not in a hurry. The same thing is beginning to happen to travel as a result of video teleconferencing. Increasingly people are using on-line E-tail purchases as a replacement of trips to the mall or the corner store.

I think back to the times when my Dad used to head off for 8 to 12 weeks a year on buying trips to New York, Toronto, and overseas to New Delhi and Hong Kong - now much the same thing is done using video teleconferencing.

All of these and many more developments have lead to fundamental and chronic instability in

also lead to the death of distance - as Frances Cairncross from the Economist says, there has never been a time where distance has meant less than it does to day.

As a direct result of networks, today, wherever you are becomes the office - this has quickly lead to changing ideas about the nature of going to work, a changing concept of what and where the labor pool is, and increasingly the shipping of jobs off-shore where labor costs are significantly cheaper and labor laws are not nearly as stringent.

MIT's Nicholas Negroponte talks about the fact that in a digital world, we are rapidly moving from atoms to bits - from physical objects to digital 0's and 1's - the form they take left to the needs of the user - this has also lead to a changing notion of what it means to wait for things - the emergence of ATM's, faxes, e-mail, on-line shopping, cellular phones, two way pagers and the increasing ability to access information anytime, anywhere is a strong indication of this.

#3 The evolution of computers

Ask yourself - what is a computer? What is a computer? When I mention the word, what do you think of? Because of the growth in technological power resulting from Moore's Law, we have seen a startling progression from mainframes to mini-computers, to desktop computers, to laptop computers, to palmtop computers, to wearable computers and in due course, to embedded computers. All this has lead and will continue to lead to even more instability in our lives. These portable tools of personal empowerment are radically and rapidly changing the concept of the labor force.

As chips automate more and more production, America is quickly moving from a labor force to mind force. Couple this with changing concepts of reality that result wearable computers with head mounted displays. Devices such as these are moving us from augmented reality to virtual reality and eventually to virtual existence. such devices will forever alter of the notion of the who, what, when, where, why & how of life as well as the who, what, when, where, why & how of learning. The emergence of such devices with their amazing ability to access information any time, anywhere means that learning can no longer be just be about memorization - simple regurgitation of facts doesn't work in an age of disposable information in which the amount of raw data is said to have increased by at least twenty times between 1990 and 2000. And this is only the beginning!

Take a look at the new network economy that provides on-line, anywhere, anytime access to services, products and information. All this has lead to a bewildering new set of rules that completely change what it means to be prepared for world of work

Then add Moore's Law (the computational power and speed of electronic devices doubling every 18 months while it declines in value relative to the power by 50% - the Law of the Photon (

year - combined with convergence and miniaturization (more and more devices being squeezed together onto a smaller and smaller piece of electronic real estate) and biotechnology.

The implications over a short period of time are enormous. If development proceeds as it appears to be proceeding, it means that we not only will we be dealing with constant change but an accelerating rate of change. This leads us to a corollary to the law of technologically induced instability. The now and future reality is that since the pace of technologically driven change is accelerating, fundamental uncertainty will remain the foundation of life in the future. It's time to face the music. The cold hard truth is that for a vast majority of our world, this is already the case. This sets the stage for...

The Clash of the Titans

The impending battle will be between the rampaging juggernaut of technologically driven change, and the amazing stability and historical resistance to change of the public education system. While there have been some challenges to date, these have been mere skirmishes. The real collision looms directly ahead.

There have been an interesting variety of responses to this impending clash. Some are in denial - they tell themselves that this just isn't happening. Others have become Luddites, actively denying, resisting, and in some cases subverting change efforts. Then there are the Observers who look accept that the world is changing, but believe that it is something that happens somewhere else to someone else (but not to them) And finally, there are the Participants who understand that if they don't change they will be more & more irrelevant. For the most part, we suspect that those are the people that we are talking to right now.

So the big question is, how do you begin to participate and, in doing so, start to make the transition from where you are to where you need to be? If we are to be successful, we will need a new and very different mindset than exist today - a mindset that requires us to consider new ways of thinking about things. The bottom line is that we just can't stand still resting on our laurels and the imagined perfection of the past. This message is particularly hard for many of us who remember back to a time when life used to provide a solid foundation to stand on. Living in an age of constant change means that things will only hold you up for short period. If you stop moving, quite simply you'll sink. Dealing with the future is like trying to stand on quicksand

The key to future success is to learn to dance on quicksand, and to learn to move quickly before you become mired. How can this be done?

9 Steps to Dancing on Quicksand

The fundamental inversion of Industrial Age thinking means everything has been turned upside down, so don't be surprised if some of these steps sound really strange:

1. View success as an enemy

Huh??!!! I'm sure you're wondering what the heck we're talking about. The bottom line is that success tends to breed complacency, stifle creativity and as a result makes us less competitive. Think back to Stanley Kubrick's movie *2001, A Space Odyssey*, which came out in the late 60's - what airline was the one used to get passengers from the Earth to the Moon - why it was Pan Am of course - flown with them lately? Of course not, they've been out of business for some time now - but back in 1969 they were the biggest in the world - that's why it made sense for the producers of *2001 A Space Odyssey* to use them. When was the last time you shopped at a Woolworths? - how about bought a computer from Commodore? At one time, each of these companies was at or near the top of their field - but not anymore. In fact, if you were to take a list of the Fortune 500 from December, 1985 and compare it with the Fortune 500 list for today, you would discover that more than 300 of the companies on that original list are no longer on the list - in fact, many of them no longer exist.

Viewing success as the enemy is the basis for considering who really won WW II? Whose economies were we chasing through most of the 80s and 90s? Germany and Japan. How could this have happened?

At the end of the war, Americans returned home to an economic infrastructure that was completely intact and took up basically where they had left off. Meanwhile in Europe and parts of Asia, where little of the pre-war economic infrastructure remained, we saw widespread destruction and the related desperation that tends to accompany devastation.

In order to survive, these countries were forced to start thinking outside the box in order to reinvent themselves. At first, at least on the surface, very little happened - as an example, in the early years, most of the products made in Japan were little more than cheap, imitation junk ... but that's certainly not the case anymore. Suddenly in the 70's we stopped buying American built cars, refrigerators, stereos, TV and other manufactured goods, and started buying Japanese products - was it because the American products were cheaper and better made? Obviously not. Complacency had set in for many American industries and it finally caught up with them.

In Tom Peters book *Circle of Innovation*, he describes the strategy for the 90's as "change direction & run like hell". More and more people are beginning to realize that it's almost impossible to make huge changes in short period of time. As Tom Peters says "you can't leap a chasm in two bounds" - you either leap it all at once or down you go.

model stresses that the way to bring about meaningful change is to try and change one thing in our daily practices every day or week, and to compound them - keep doing the things you changed differently, while changing one more thing in our practice - when compounded over a course of weeks, months and years, this can bring about profound, systemic changes.

Using a similar approach, writer Robert Kriegel has written two best selling books - *If It Ain't Broke, Break It*; and *Sacred Cows Make the Best Burgers*. Is there a message embedded there somewhere? Now consider Sony - they completely replace their product line every 90 days - which brings a staggering new perspective to the notion of disposable income - but even though this may seem awfully quick, Sony hopes to reduce this cycle to 18 days by very early in the 21st Century - their corporate motto says, "let's reinvent ourselves today before someone else does it for us. Doesn't this sound like the motto for American schools?"

What does this mean for education?

Just because we were successful yesterday (and we were!!!) using the Industrial Age educational model, doesn't mean we'll continue to be successful tomorrow. In today and tomorrow's world, change will be necessary if we're to survive let alone thrive.

2. View discomfort as a friend

The golden rule of the future is that change is the only constant. Whether we like it or not, change makes us feel uncomfortable (in fact the only people who don't experience stress are dead people) so you have to view discomfort as friend? If you're comfortable with where you're at, you're just not moving. All of us must learn to accept the looming affront of change. It's like a wave, we must learn to get up on top of it and ride or run risk of becoming permanently embedded as part of the beach as the wave sweeps over us.

What does this mean for education?

If there's one thing that captures education it's "comfortable." That's because over the course of the past few decades, we've had to change very little relative to the rest of world. The key to future success is for the institution of education to move well beyond what we're currently comfortable with.

3. Be a Teflon person

We must learn to let go of things before they stick. In a fast changing world, attachment can be very dangerous because it can lead to resistance to change. We must all learn the principals of organized abandonment (knowing when to hold them and when to fold them) as well as the principals of composition/decomposition (for everything that we add, we will need to let go of something.) Consider Lewis Galoob Toys - they're a shell company - all they do is develop ideas and then they contract out the design, the engineering, the manufacturing, the distribution, even the accounts receivable - all they do is create ideas. Beyond this they only sign contracts

Compare Lewis Galoob to Fischer Price, who are an all-in-one toy manufacturer complete with their own factories. The recent shutdown of a modern new manufacturing plant in Quebec shows the relative inflexibility that companies like FP operate under. With a full-time staff of 8, Lewis Galoob generates more than \$400 million of sales a year.

Lewis Galoob is living proof of the principals of organized abandonment - that we must all learn to let go of our existing paradigms of life because, like it or not, obsolescence is guaranteed - we must all learn to undo & reinvent our thinking again and again.

What does this mean for education?

If change is a constant, we can't stay married to the traditional nature of schools, the traditional methods of instruction or our traditional assumptions about the nature of learning. No one wants the education system to be the next Pan Am.

4. Live each tomorrow like there's no today

Huh? Say what? The problem is that your eyes can deceive you and make you think you're seeing reality when you're only seeing history. We all need to learn to thin in future tense. Consider a hockey player - do they live in present? Wayne Gretzky said "I skate to where the puck is going to be, not to where it is." Today, the world is a moving target - as a result, there is a greatly increased role for intuition because today is only useful as a pointer to tomorrow.

What does this mean for education?

As educators we need to be leading from the future and understand that the present is nothing more than the past of the future - our job is not just to prepare kids for today or tomorrow - it's also to prepare them for the countless days beyond tomorrow. To do this, we must always begin our planning with the end in mind. We must step back from the tyranny of today and ask a simple question - where will education be tomorrow? Will it be the same or will it be different? And, if it's different, what might it look like?

5. Don't work harder, work smarter

The bottom line is, you can't compete without technology. Before laser surgery, I used to wear glasses. I didn't spend my time pondering why they worked any more than I ponder how my car works. I just used them to do what I needed to do - they became an essential but transparent element in my life. It's much the same way with new technologies. We need to learn to let go of what these technologies can do better and understand that their presence is not a threat but an aid. We must learn to let go and allow technology to help us redefine what it means to be human, thus allowing us to let go of the things that the technology does better than humans do and focus on the things that humans can do better than the technology.

What does this mean for education?

We must rethink the role of technology in learning and see it as a means for both personal &

6. Grab hold of what you can't touch

In the Industrial Age things were the most important. Things such as buildings, machinery, desks, products, and physical materials. Now in the Information Age the most valuable resources are in our heads and the non-material realities are most important - the new currency is human capital, information, processes and the learning that goes on behind the physical realities in the virtual world - grabbing onto these and leveraging them to our advantage is critical to future success.

What does this mean for education?

These non-physical realities are powerful teaching resources for anyone, anytime, anywhere learning - educators must learn to leverage these if we are to be successful in reconstructing schools.

6. Be ready to take 1 step backward to move 2 steps forward.

In order to be successful, we need to detach ourselves from the tyranny of the urgent - to separate ourselves from the day - to move beyond the trees to the forest. To do this, we must take time to relax, meditate, exercise, take up a hobby and learn. It's only balance that brings perspective, Only through taking the time to reflect can we hope to see and understand the bigger picture. The mind only becomes open when you're not consumed with the daily problems of life. Only then can you start thinking outside the box.

What does this mean for education?

Personal activities can lead to ideas that can be transposed into successful personal and professional experiences. Inevitably we become more passionate for work when we have contrasts & choices in our lives

7. Embrace the law of the Borg

The Industrial Age way of thinking broke things into parts, departments, bite size chunks - this led to turf wars and what we affectionately call the hardening of the categories - think of banks, insurance companies and schools (I only teach Math or worse, I only teach senior Math) - but increasingly, it's not about turf - it's about interrelationships - today these are widely perceived as being more important than isolated items. The Law of Borg says that power & profit come not from things done in isolation but from the interconnection of people, companies, and organizations. The key to future success is to be able to step back from the individual issues or items, to consider and reconsider things holistically then use this to restructure our traditional business & educational thinking.

What does this mean for education?

It's time for us to carefully question departmentalized learning. In a modern world, connections are the most important - not just the connections within a discipline, but the connections between disciplines

9. Stay one step ahead of irrelevance

It's a simple fact of life, if you stop, you'll get passed by. In the future, you won't just be able to earn a living...you'll need to be learning living - learning and relearning as well as letting go of previous thinking - this is something you will never be able to stop today - learning today, learning tomorrow, learning forever.

It's all about learning to become a quick-change artist. Ambiguity and fundamental uncertainty are and will remain the norm. To survive in this environment, we must keep reshaping, shifting and flexing to fit the changing world. In fact, it's increasingly the only way to survive in a fiercely competitive environment.

What does this mean for education?

Simply put, change & learn or run the risk of becoming irrelevant. At all costs you don't want to be in the position of doing the wrong thing well - there is absolutely no interest or market for obsolete excellence. You don't want to become the next Pan Am.

Coping with change

In the future you will be what you think - you need to learn to live in future, because anything else is the past

In times of radical change, the learners inherit the earth...while the learned find themselves perfectly equipped for a world that no longer exists

Eric Hoffer

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