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THE FUTURE OF WORK

INSIDE

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FUTURE OF WORK

It's to big to be an election issue?

BY JON ROHR

This issue, titled "The Future of Work", is seizing the opportunity to really wake up our political leaders to the challenges facing labour, and what the future might have in store for employers and employees alike.

An ongoing theme with Exchange Magazine originates back in the early 90's, as a lesson learned from University of Waterloo Economics Professor Larry Smith. In the 1992 Exchange Magazine feature, titled "The Apostle of Optimism," Smith introduced what I found as a useful mantra - "adapt or die". This mantra is as relevant today as it was back then. I would wager that its meaning is more significant today than ever before, as changes in Ontario's work force have become more complex and challenging, and future change is unknown.

Also in this issue is Carol Simpson; at the time of our interview, Carol was Executive Director of Work Force Planning Board of Waterloo Region, Wellington and Dufferin Counties (WFPB). She is a long time advocate of employers and employees, she has worked closely with Smith, as well as all of the local groups that are vested and engaged in this community. The WFPB works with many post secondary education, employment and skills-focused organizations. I was always impressed with the workforce challenges Simpson had to get in front of. Moving forward, I look forward to working with her successor, Charlene Hofbrauer.

At our last meeting, Simpson announced that she is moving on from the planning board. She told me she's entering the next stage of life, the one where she "gets to decide the terms of her day". As a thank you for her friendship and shared insight, Carol Simpson is this issue's Making a Difference ... very fitting!

As one last gesture, she invited me to a round-table on the Future of Work, hosted by the planning board in Ayr and organized by the Organization for Economic Cooperation and Development (OECD). The OECD is based in France and represents 36 countries. Essentially, the OECD is a "united front for countries to share about their common eco-social problems, as well as collaborate on finding solutions".

The round-table, which was held in September, discussed the research currently being conducted by the OECD. The three Ontario-specific research areas, also include London and Hamilton, But our story, aggregated by Exchange and written by Paul Knowles, focuses on the Kitchener-Waterloo, Cambridge, Guelph and area. The purpose of the OECD research is to look at "important insights into the changing nature of work and how technology, digitization and automation is set to shift the way we do work". The report should be out early next year.

This cover story, suitably titled "A Great Future or Future Disaster?", will provide readers insight into the discussions held that day. The round-table lasted 2.5 hours, and covered many different challenges facing work places all over the globe. It was a fascinating afternoon. You can become familiar with the complex issues by reading the article on page 6. The day closed with a request from the organizers Jonathan Barr and Anil Verma. The request was to share, individually, "the top three issues/priorities [guests] felt should be focused on or highlighted in their final report."

Here are my three top priorities.

1) We need to develop a new life long learning education funding model, one that does not get ambushed by party politics nor fluctuates every 4-5 years. A model where cash flow funds are solid, to faciliate planning with a 15-20 year view. One designed to benefit the people needing education at any stage of their employment. Only by focusing deeper into the "students" position and less on the "party" position, can we meet some good long term goals.

2) All life long learning stakeholders should be required to participate in the collaborative educational discussions with industry and labour at the same table. This means, all vested in the learning and upskilling paradigm, including those from our elementary and secondary schools boards, including organized labour groups. Include school superintendents, contracted curriculum strategist, training generals, include commercial media and social media outlets so transparency can be realized .

3) Get to it now. Automation, machine learning and AI are all creating a pace of change for our workforce unprecedented in history. The issues facing our labour force, are the re-skilling of the middle class and the skilling of the lower class. The longer we delay in tackling this situation, the more difficult and complex this situation will become. We need to create an urgency in government and in educators. To find solutions in individual regions and fund them differently, to try to solve unique problems of the area, quickly. There is no one blanket solution for everywhere. Having said that, a solution must be found with the promise that it can be rolled out, in a scalable way, with a large degree of regional relevance.

We are lucky to be located in Waterloo Region and Guelph, as we have many community assets in the right place. We were dealing with this issue 30 years ago but we still have many problems. I believe we are economicaly and geographicly blessed, with some really awesome institutions that are focused on just this issue.

Waterloo Region, Guelph and surrounding area have time-after-time proven that we are best prepared for "The Future of Work". And we should be, we are a significant player in creating the disturbance. Yes, we're part of the problem, more importantly we're part of the solution. If our governments fail to adequately fund a long term solution to the labour and skills problem, we'll all be affected for a very long time. Currently we have a labour shortage, we need to change the mind set of the young people who just don't want to work. Many don't have the skills to find out what they need to do to get a good job. We need to focus more on fixing our education streams and employment strategies to suit life long learners.

Thanks again for reading Exchange Magazine Quarterly; I trust you'll enjoy it.

Jon

DAN MATHERS OF ELEVEN-X - PAGE 6

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HUMANS WITH AI

A GREAT FUTURE OR FUTURE DISASTER?

How Artificial Intelligence is changing everything, and creating opportunities for this Region

BY PAUL KNOWLES

As Bob Dylan prophesied, "The times they are a-changin'." We're at the cusp of what University of Waterloo professor Larry Smith calls "a potentially gigantic shift". He's talking about the impact of AI (Artificial Intelligence), a new reality so impactful, confusing, threatening, promising... well, pick any dramatic adjective and it probably fits... that no one is really sure what to expect.

The future may be terrific, or it may be a terrible place to be, especially for employees in jobs about to be AI-affected. And that will be almost every job.

The future may also be better right here in Waterloo Region than in many parts of the world, because of the innovation-facing resources we have here. Or, we may find ourselves struggling to adapt, and adapt quickly, just like everyone else.

Exchange Magazine talked to more than 20 people with skin in the AI game, several of whom participated in a seminar hosted in Waterloo Region by the Workforce Planning Board of Waterloo, Wellington and Dufferin, and facilitated by Organisation for Economic Co-operation and Development, while others, representing individual industries or bringing expertise from academic disciplines, spoke individually to Exchange.

> "This is a different ball game entirely. You can't draw parallels with the past." – Larry Smith

On one thing, everyone agrees: change is upon us, it's big, it's all-encompassing, and we have not yet reached a point where we understand how AI is going to disrupt our industries, our economy, or our individual worlds. Our experts do believe that rapid adaptation – on the part of companies, employees, governments, and educational institutions – must happen, and must begin now.

"This is different"

Larry Smith is Adjunct Associate Professor at the Conrad School of Entrepreneurship and Business. He has studied, taught, and written about AI and its potential impacts, and he insists strongly that we are at an unprecedented point in employment history. "This is a different ball game entirely," he told Exchange. "You can't draw parallels with the past."

In Smith's analysis, AI could have an impact far beyond anything previous technical and digital innovations have caused – and we don't really have a clue about what that impact may be.

The truth is, we may not even have a clue about what AI itself really is. When AI is discussed terms like machine learning, Internet of Things, and even simply "automation" tend to come up. One definition is that AI "is the simulation of human intelligence processes by machines, especially computer systems."

In other words, machines that learn. But there is even more inherent in current developments – think about driverless cars, that not only have to learn what might be seen as factual information, but also have to be able to make ethical and moral decisions when faced with a crisis – the potential for harm to humans, for example.

Impact on the workplace

What we do know, for certain, is that AI is already having – and will have in much greater scale – an impact on the workplace. At the OECD session, Jonathan Barr said, "One thing is for certain – automation is fundamentally changing the labour market, particularly for some regions with their particular employment mix. Some of that is already happening, but this is amplified in the future."

Barr is the Head of the Employment and Skills Unit within the Local Employment, Skills, and Social Innovation Division of the Centre for Entrepreneurship, SMEs, Regions, and Cities of the OECD. He told the discussion group that the current OECD study on AI assumes three things: "1) that AI will affect tasks of every job; 2) that AI will enable disruption from a distance; and 3) that AI will create new jobs and perhaps more importantly new skill requirements within every job."

He added, "We know that there are positive and negative impacts from automation. One of the good things is that it's a way to tackle skill shortages. Employers can't find people. They can automate their production process and that helps them meet their company's needs."

That's a potential upside. But Barr added, "We also know that for some people, in some places, automation is likely to destroy jobs. When looking at the data, you see that the labour market is polarizing across Canada, and that if you look at the occupational profile of cities or CMA's you see that middle skilled jobs are declining, relative to lower and high skilled jobs. The moral of the story is that these good, middle class jobs are disappearing; it's the low skill jobs and the high skill jobs, that are remaining."

Solution or threat?

There is no question that AI is actually both a solution and a threat. AI applications will solve current problems and allow unprecedented innovation. AI will also disrupt employment realities in unprecedented ways. There are real-life examples in which AI is a solution, pure and simple. Dan Mathers is CEO and co-founder of eleven-X Inc., a Waterloo-based "Internet of Things solutions provider". Mathers suggests that there is an information stream that leads to the need for AI – what he terms the "DNA" includes devices that collect data, the data is gathered and communicated via a network, the data is then provided to application software. It is then necessary to use AI or machine learning "in order to make all that data useful."

One local example involving eleven-X is the collection of data about the aquifer that provides virtually all the water to the communities of Waterloo Region. In the past, the aquifer was monitored manually – there are sensors in the thousands of wells and water sources, which were read manually once a quarter. Reports were then prepared, also manually, which took another three months.

So the reality was, all information on the depth and temperature of the aquifer was always about six months old.

Eleven-X developed a device that connects to the sensor already in the wells; it communicates with the company's wireless network, and now, instead of waiting half a year, "they have information in real time," says Mathers.

> "AI will create new jobs and perhaps more importantly new skill requirements within every job." – Jonathan Barr

The company doesn't just concern itself with water – Mathers explains that eleven-x focuses on smart cities, and intelligent buildings. Two recent examples of smart city applications come from Stratford, Ontario, and Fredericton, New Brunswick.

In Stratford, parking is a problem in high theatre season. Eleven-x developed a sensor system that now allows visitors to use an application, which tells them where parking is available in real time.

In Fredericton, the company did a sensor-monitor-based study of the use of accessible parking spaces, and found some were almost never used while others were in high demand. This allowed the city to re-position some of the spaces, for optimal use by people needing accessible parking.

Eleven-X is also working with developers and owners of high-rise buildings with underground parking, parking spots that are usually empty during the day, while drivers in urban cores circle the block looking for available parking. Mathers believes that eleven-X systems can be used to make open spots in private parking facilities available during the day, to the benefit of the space owners, and the space-seekers.

These are all examples of IoT applications requiring AI functionality. But they are also examples of solutions with little or no downside in terms of job loss. Says Mathers, "We focus on helping customers do things they couldn't do before." He argues that the monitoring systems do not cost jobs, because it would have been impossible to employ enough people to carry out the kind of information gathering done by their systems.

He also argues that, "If cities are saving money on the budget, they will spend it elsewhere. We allow them to do more with the same amount of expense."

So new AI innovations can create solutions without significant job loss... in some cases. But as Jonathan Barr says, for many employers, quite simply, "You'll need fewer people... and every job will be affected by AI." So he adds, "The importance of skills is really fundamental for economic growth."

Enabling veteran workers

Not all AI applications are a threat, or even demand retraining of workers. Take Kitchener-based Praemo, for example. Michael Martinez is founder, president and CEO of Praemo; the company's product is the AI solution branded "Razor".

Martinez explains that he and his colleagues envisioned and developed Razor because of their experience on the operations side of industry. "We were industry folks who felt the bumps and bruises of living it. We talk the same language, and our customers get it."

He explains, simply, that "Coming from operations myself, one of the things I always wanted to do was, get ahead of the problem.... To get ahead of it, unless you had a crystal ball, the next best thing was to leverage AI. You need to adopt technology strategically." So in 2017, Martinez quit his job, and with colleagues including Praemo founder and CFO Paul Hancock,, founded a company that uses AI to collect and analyze data from machines, "to look for events and anomalies that are going to lead to something that is potentially going to disrupt the operation or disrupt it catastrophically.... We're looking for patterns that are going in wrong directions."

The intriguing thing about the Razor AI solution is, it does not require significant retraining of the machine operators. In Martinez's phrase, "We wanted something that doesn't bother someone until you need to bother them. We developed Razor, lean enough to implement quickly and cost-effective."

He adds, "The data that is analyzed comes from the machines" – which in today's world are already collecting it, whether the operator is aware of that or not. Razor identifies potential problems far earlier than humans could, notifies the operator, and thus enables proactive action that leads to the most efficient and cost-effective solutions.

That means that long-time employees need not fear the coming of AI. Hancock told Exchange, "We still need these veterans. You need those people with experience... We want to be able to get information that humans can't. But when we get information, it's still just a suggestion to a human."

One of the important attributes of AI is that the application learns, and therefore, becomes even more effective with experience. "Once it starts seeing those patterns leading to downtime, the next time it informs the operator that 'this signature leads to downtime'," explains Martinez.

He adds, "Those people who are here for 20 years, 40 years... what we can do is send the information into a work order, so for them, it doesn't change. Because of new information, the equipment is telling us new information, but the human employees are really not doing anything different in terms of their vocation.... The operator is still there, and we're grabbing the machine data to give more information to the operator. We're not taking jobs away from operators, we're empowering them."

From a business perspective, an AI application that decreases downtime and makes employees more efficient is a win. Martinez

says, "We're a productivity enabler… more units in a day with the same number of workers. You're more competitive."

Hancock and Martinez admit that although their AI application should not cost workers jobs – and in fact, may extend the employment potential for some, because their work becomes more efficient although their personal job descriptions don't change – Razor does replace costly and personnel-heavy continuous improvement teams.

Focus on "skills"

When experts discuss AI and its attendant impacts, there is a lot of talk about "skills", and "skills training." For example, Anil Verma, Director, Centre of Industrial Relations and HR Professor of Industrial Relations and HR Management at University of Toronto, and an organizer of OECD session said, "14% of jobs are likely to disappear, or are at high risk of disappearing. The magnitude might be different this time, meaning there'll be quite a few jobs destroyed; the more important thing is that the jobs will go through significant change as in tasks, and the skills required to do them. Thus 32% of jobs across the 36 countries [included in a current OECD study] are vulnerable to change."

Simon Chan, Vice President, Talent, Academy, and Future of Work at Communitech, told his colleagues at the OECD event that there are a number of challenges when it comes to the skills question. He noted that "All sorts of technology is coming in, and people are going to have to learn it," and not only learn new tech, but "learn it at a greater rate of speed." He pointed out that this continual "re-skilling and up-skilling" may not be funded by an employer, leaving the worker with that additional challenge.

Literacy challenge

Rapid change is not the only challenge when it comes to the need for skills training and adaptability. The reality is, people can be re-trained only if they have the fundamental skills to enter re-training. Jane Tuer is executive director of Project Read. She told the OECD session that literacy – and the lack thereof – can be a significant barrier for people needing to upgrade their skills.

She said, "If we don't do something about our literacy levels in this country, we are going to be falling behind. Because we don't have enough people with the skills able to be trained to do the job that we have right now. So how are we going to do it when the skills required are even higher?"

Tuer said, "We haven't ever done a significant investment in literacy and that's a real big problem. People just want to pretend it isn't even there. And you're always going to have that issue if you don't solve it at the adult issue. Because [the adult parent is] a child's first teacher and those children are not going to have those advantages going to school. They are already how many years behind because they didn't have the advantage of a parent that can read to them every day to show them a literacy skill. If we don't invest there, we're just putting a bandaid solution on."

Tuer also argued that investment in literacy is one of the most successful ways government can use its money. "If you invest that money, it comes back to you, 10-fold." She says that when people receive literacy upgrading, "within a year of them being employed, they've paid the government back."

So she argues that money for literacy training "has to come from the government, it has to come from taxes... It will pay you out. Economists have proven this, that you can bring billions of dollars back into the economy by basic literacy skills."

Ian Howcroft is CEO of Skills Ontario. He agrees: "Literacy is a foundational skill. How can you build up those other skills if your not dealing with literacy, numeracy, properly?"

Communicate, innovate

Students often ask Larry Smith for advice about what skills they will need to survive in this new world of work. He says that the future is highly unpredictable, but he is sure that two skills will be essential:

> "We focus on helping customers do things they couldn't do before."
> – Dan Mathers

"the ability to communicate," and "to be an innovator."

When experts discuss the impact of AI, the idea of communication – of "literacy" in all its forms – surges to the forefront. For example, Verma says, "Even though we're becoming a 21st Century economy, there are people getting left behind. So we need basic literacy, we need entrepreneurship literacy, we need digital literacy." He added that these needs are not being adequately met because "We are all stuck in some format, some framework from the past."

Howcroft told the OECD group that the record on adapting to new need for skills is not strong. He says, "It was a big issue 10 years ago and it's going to be a bigger issue 10 years from now, and all we do is talk about it. We never take the necessary actions, so it's something that always seems to get delayed. The average age of someone starting an apprenticeship is 28," which Howcroft believes is far too late.

He says there is a need to communicate the urgency for skills training to young people, but that is not happening effectively. "We're not getting to the audiences, and the audiences aren't just the people in schools – their parents, their businesses, it's everybody. I think we don't have a concerted skills strategy in Ontario or Canada... We're disadvantaging ourselves in the way that we're dealing with this... Every

five years, the Federal government funds a trip to Germany, to find out what they're doing, but we never come back and say this is what we need to do for a long term plan." He added that the picture is not entirely bleak: "There are a lot of good things going on, a lot of great examples, but it's a patchwork quilt around the province."

Howcroft calls for the development of "a strategy that will build on collaboration, cooperation and identify what's working and how do we share that, and how do we take that to the next level." But he warns that implementing such a strategy is "easy to say, but really hard to do, because we've been doing it for 40 years", and the current pace of innovation and change demand something new and different.

> "We want to be able to get information that humans can't. But when we get information, it's still just a suggestion to a human." – Michael Martinez

Who's responsible?

The OECD discussion group spent the bulk of its time together on the question of training to meet the demands of the AI age. But the question was not so much about what kind of skills training is needed; the group spent a lot of time discussing the question of who provides it – and the answer was a call for an unprecedented level of collaboration.

Jonathan Barr sketched out the current status of training: "Any kind of skill development investment is really a kind of partnership, between the individual, the government and the employer. And the mix changes over your life course. So when you're young, in early education, the individual families are investing a lot. As you move into college and the workforce, the employer comes more into the picture, and then as you move toward a second career, then again the government is investing more because we are building our universities and colleges, and investing in education for the older people. And individuals are bearing more of the cost because you're deciding to go back to school. And the employers don't necessarily want to be part of that. So this mix changes depending on the choices we make for ourselves."

Simon Chan argues that change in the provision of skills training is essential. He told the discussion group, "I think the model that we are looking for is much more of a collaborative model, in terms of bringing in different stakeholders, who may or may not have been involved before." He says that "the private sector in general doesn't want to pay for it, especially the large organizations; [they] don't necessarily see why they should."

Chan believes that has to change; that the private sector can in fact lead the way to a new community-based skills training model. "Community based learning, community based best practices, and having some in private sector lead some of that, and fund some of that… it seems to resonate to a degree." He adds, "I do think some kind of community based approach is something that can work."

Jennifer Woodside is with the University of Waterloo. She believes that the UW co-op program is a good model of collaboration. "It is a partnership that includes all three parties," she said. "Students are paying to get access to a co-op degree, the government is paying for those extra credits and … the employers are paying. Not only are they paying for the students, they are paying to insure that the students have a good time there, to be seeing what a new generation of students expect."

Two participants in the discussion session pointed to an effective program initiated by a local municipality, in Windsor-Essex. Amy Britten and Charlene Hofbrauer, Executive Director at Workforce Planning Board of Waterloo Wellington Dufferin, both referenced community employment tools, like WEJOBS. Britten described the app: "It's a cool mapping tool, so if you are interested in doing a specific job, this tool maps that: where that job is, what surrounds that job, can I get there, is there child care?"

Discussion at the OECD session did suggest one large inequity in the spectrum of skills training – the reality that smaller companies have to spend money they may not actually have to train new employees… employees who are then "poached" by larger companies once their training and experience are in place. The investment is made by the company that ultimately does not benefit from that investment!

Ian McLean is President and CEO of the Greater Kitchener-Waterloo Chamber of Commerce. He commented about the plight of small businesses, especially when it relates to the training and re-training necessitated by AI. "It's one thing to talk about big business, it's another to talk about the 96% or 97% percent, depending on how you define small business. I categorize small business as been anyone that has 50 or 60 employees or less. That's the vast majority of businesses. They don't have the capacity to invest, or have the time. They may want to do something, they may want to be involved in it, but they don't have the capacity. So that's something that we need to take those large corporate folks who succeed, who are doing business with many of those small businesses."

He adds, " When you drill down, you need to understand that small business has a unique set of challenges, that doesn't lend itself to a big solution."

Longer-term commitments

One theme that recurred during the OECD session was the need for a commitment from governments that stretches beyond election cycles. Ian McLean was forthright: "A commitment isn't three years or five years, a commitment is for 15 years, because then you can set some roots down. That's where I think the businesses and communities have to push back against government." But he does not see all the responsibility resting on governmental shoulders, saying that small, medium and large businesses also need to invest in training. "You can't wait for government. Businesses have got to come up with something we're prepared to go forward on."

Other experts agreed that government has to act, and act quickly, but not unilaterally, stressing the need for ongoing collaboration across the economic landscape.

Sector-based collaboration

Barbara Fennessey is Vice-President, Applied Research and Entrepreneurship at Conestoga College. She says, "a community is certainly one form of bringing people together, but I think for some of this training, you're going to have to look at it as sector-based." She pointed to the construction industry as one example where this kind of collaboration is already taking place. "If you look at the construction companies, there would be a common need for some innovation across many of those companies, and collectively there could be an organized or joint investment in joint training, across many employers. I think employers are investing in that, at a sector

level, and there are some commonalities that they're going to share in that investment."

Fennessey suggests that there will have to be flexibility as to how training is delivered. For example, she said, "Employees are usually quite willing to invest time, if you've got micro-credentials that you could deliver, and people can be learning over their lunch hour, before and after work on breaks and so on. There is an opportunity for them [employees] to give their time, as part of their contribution."

Fennessey also referred to the challenge of funding training. She commented that for "the people who need to go back to school, or begin school, I think we do need to look at some of these tuition models." She pointed to "a model in Australia, where the students go to school, then, based on their level of income they repay certain amounts back, after they begin working."

McLean pointed to the importance of sector-based collaboration, because each sector will have different needs: "What do advanced manufacturing need, what do the trades need in construction, what are the small start-ups' unique set of skills, then the mature tech companies, and how does all that fit together? I think the 'sectoral' has really got to be the way to get your arms around the problem."

Fennessey says that in her role at Conestoga, she sees a definite need for support on a sectoral basis. "We created a post graduate certificate in robotics and automation. We do that because we know from the research we've done, that there is a high demand for that. And so the College makes the investment on their own, to develop that, then gets approval from the Ministry etc. and that gets developed.

"But if you leave that to individuals – this is why it can't work for the individuals. First of all, they have to understand what they will train on, what do they take, we need that intelligence around where the jobs are today and in the future. So we must have that intelligence.

"Secondly, who will develop that training, because it's very expensive, thousands of dollars to develop, even a small program. Who is going to spend that money? If it's not the education institution, and it's not the employers, and not a government entity, individuals can't do that. And employers and employers themselves, doesn't necessarily have those resources, unless they're a big company.... But a sector, or collective of companies, can make that investment together."

The need for talent

Ian McLean told the OECD session that, "talent is the biggest issue with our chamber members.... Talent is the number one thing that people are talking about right now, and have been for a long time. And it's only going to get worse in the future." It's not just a question of re-training existing worker to meet the demands of the new AI, IoT age, it's finding people to fill jobs in the first place.

> "If we don't do something about our literacy levels in this country, we are going to be falling behind." – Jane Tuer

McLean pointed to a Toronto Board of Trade study that said that when it came to infrastructure projects alone in the city, there are between 20,000 and 30,000 skilled jobs "they wouldn't be able to fill.... Project managers, pipefitters, up and down the list."

Martha George is CEO of the Grand Valley Construction Association. She told the OECD group that almost everything in the construction industry has already experienced huge changes driven by technology, and that "traditional is out the window... when everyone says construction hasn't changed in years, they're just dead wrong. It's changing at such a rapid speed, and we need to be aware of that." This sparks an immediate need for new and innovative training methods, not only training for jobs where there are not enough skilled tradespeople, but also training for tradespeople whose jobs have been eliminated or changed by AI and other technologies.

George also notes that when the discussion is about training, there is a significant resource that is often ignored. "We are also missing out on the folks that are on Ontario works, or newcomers that are coming in. That's the group that we need to focus in on because that is the untapped resource we have. We keep talking that we have a skills shortage, we have a people shortage, [while] we have this group of people that we kind of leave. We don't do

something and they want to work, newcomers want to work, and we just need to be able to train them, too."

Nora Whittington, of Immigration Waterloo Region, points out that some of that training has to be in language skills. "Literacy isn't the only language. It's English language training too, not only just to enter the workforce, but to advance as with it." She points to the need for programs "offered by local manufacturers, where the have teachers come in to teach English to workers, so as to facilitate their advancement."

She notes that "Reception House, which welcomes refugees, was seeing such a gap in Syrian newcomers that they established this program called 'Working Together'. They can partner with manufacturers particularly, to get these folks off of Ontario Works, and into the workforce. This is an example of an employer that has agreed to allow the staff to attend the English language classes on site, working with the literacy group. English language is a big factor. They wanted to see some of these staff advance and now it's starting to happen, because of this program."

> "We need to ensure that people understand that learning is a constant." – Barbara Fennessey

There seems to be general agreement that young people continue to be reluctant to enter the skilled trades, often because of misinformation. Howcroft commented, "There still is the stigma around. People don't understand the reality of manufacturing, parents don't understand the realities of skilled trade opportunities. My small organization tries to go around and promote skill trades and technology careers, to young people. We normally get in front of 110,000 kids in schools' presentation, we hold competitions, we also focused on some of the disadvantaged groups, indigenous communities and girls and young women. We're trying to expand that to be more inclusive.

"And there is that image that parents still have, [and] teachers have gone through the academic track, and don't totally understand. We used to say we had good campaign, 'Good things grow in Ontario'. We should talk to the premier, because we need a 'good things are made in Ontario'. Why don't we celebrate manufacturing like we do on the agricultural side?"

Valerie Bradford, with the City of Kitchener, agrees. "The big challenge is influencing the influencers – the parents, the guidance councilors… One thing that has been very good is the manufacturing day, which allows us to showcase manufacturing, and the opportunities [in manufacturing]… When we do manufacturing day, those buses fill up with student just like that, we also have buses for parents to go and take tours as well. Some of them actually got hired; we had immigrant workers that got on the bus last year, and some of them got hired that day. That is way of showcasing modern manufacturing, but it is one day per year… People don't realize the opportunities, that there are still really good solid jobs available in manufacturing."

Focus on youth?

A lot of the conversation about training and education is naturally focused on young people, those still in the education system or apprenticeship streams. But an interesting wrinkle on that approach was suggested in a recent Ted Talk given by network theorist Albert-

László Barabási. Barabási posited that the current assumption that young entrepreneurs are most likely to succeed is based in the wrong data; he said, "When you look at which of these individuals put out a successful company, it turns out those in 20s and 30s put out a huge number of companies – but most of them go bust. But if you are in your 50s, you are more likely to have a successful exit than if you are in your 30s."

"Success," he added, "can come at any time – it could be at any point in your career."

Barbara Fennessey stresses that "We need to ensure that people understand that learning is a constant, and that there is a need for early career, mid career and late career workers, all to embrace these concepts in literacy and digital innovation literacy as well... This is something that impacts our economy, it impacts individuals, because they need to be able to retain their jobs, it impacts families, communities and employers, because they need to recognize that if their workforce doesn't have these skills, they're not going to be competitive in the global marketplace – because it is, more and more and more, a global marketplace."

Howcroft notes that there can be an age-related barrier to training. "There seems to be an attitudinal barrier…. Your ongoing, 20-year veteran in the work force, who isn't going to have another 20 years doing that job, is reluctant to take on that education. It makes them seem like they've got a problem. There is some kind of barrier there… We can design great programs, but people have to have the willingness, we have to somehow convince them that, that's the step for them to take."

Life-long learning

Barr says that the phrase "life-long learning" – almost a cliché at this point – will finally become a reality. He told his colleagues at the OECD session, "We are all familiar with what we've had to do with previous ways of technical disruption, which is training and retraining and education. All that AI is going to do is intensify our need to develop skills. Some of you are old enough to remember the slogan 'life long learning', for the past 25 years, but it really hasn't come home to roost. I think this wave of AI is just going to force us, at the policy level and at the proactive level, to say 'How am I going to deal with training and retraining education at my end?'"

Barr argues that employees cannot be left on their own to try to cope with inevitable and rapid change. He says, "There is a need for anyone whose job is being disrupted, to be able to consult a professional – in medical terms, 'triaging'. Then they can direct you to the appropriate channel."

That's the ideal concept. But Barr admits, 'There is a lack of these services in our current system." Fennessey suggests that workers are eager to learn. She notes that, "Companies feel their employees would be willing to spend time, at home, if they can access online training, or at workplace breaks, a few hours here or there."

Waterloo 'doing much better"

Chan wonders if Waterloo Region could be a leader in preparing employers and employees for the new world of AI. He says, "I think this challenge is a national challenge, so it's good to do national best-practices or promising practices… but it has to be adapted regionally." He suggests that local entities ranging from the Chamber of Commerce to Waterloo Economic Development Corporation should all play a role. He asked, "Is there something that can be started at a community-based level, where you could actually create real systems and help to take that into other communities?"

McLean noted that "We've got some built-in advantages with three universities and a college… a unique position here in the country, and we've been doing for a lot of years." But he cautioned that there are still local gaps, especially in terms of connecting young potential workers with small and medium-sized businesses.

Barbara Fennessey believes Waterloo Region has a real advantage when it comes to readiness to adapt to change. She asks, "Is there anything that distinguishes our region from others and therefore is there a particular impact here with respect to the need for skills?" Her answer is, yes: "We have a very significant manufacturing environment here. We have a very significant IT sector here."

"Is there something that can be started at a community-based level, where you could actually create real systems and help to take that into other communities?" - Simon Chan

But while that's a plus, Fennesey argues that these sectors – and many others – need to be immediately proactive in skills training, especially digital literacy. These sectors, she says, "really need to address, the need for digital literacy. And that extends not only to the workers on the floor, and management people, but also right into skill trades. If you put a machinist in a plant today, who may not have been in school when we were planting sensors in assembly lines… these people need digital literacy on top of the other skills to function at a minimal level now."

Amy Britten is Senior Business Advisor at Ontario Ministry of Economic Development, Job Creation and Trade. She believes the Waterloo Region business environment is healthy and proactive, although she notes that the rural part of the region may be less advantaged.

Britten told the OECD session that, "I deal with industries that are high growth. A lot of them were finding that it's hard to recruit people, but once they get them, it's not so hard to keep them. And the ones that are finding that are partnering with University of Waterloo, [and] Conestoga College. They work to make their business a pleasant place to work, [with] training. They really encourage their employees to do that life long learning. A lot of them had some sort of agreement for training, whether we will pay for your time while training or whether it's, we will pay for your training if you achieve a certain grade level, or whether they brought people in to a larger group training, to adapt new technologies in their facilities.

"Those companies do really, really well. [But] what I noticed was that the rural areas are maybe not as connected to their universities."

Economic Development officer Gerry Hurst, from the Ministry of Agriculture, agreed on the importance of the rural community. "Small business and entrepreneurs are the anchors of rural economies. Nationally we don't want to fall behind in our creativity."

Chan believes that the solutions to the challenges brought by AI may have to come from the local level. He says, "Waiting for action to come at a much more macro level, it's not going to be fast enough… So a community-based approach, where you bring the leaders from the community to do it, feels like it's the intermediate… of speed and scale to be able to do this… It's a coalition

model."

Ian Howcroft points out that while Waterloo Region has enviable resources – the Advanced Manufacturing cluster, Fed Dev investments, Future Skills – the environment is not as nimble as it should be. "We get disjointed," he told the discussion group, noting that it simply takes took long "to move things forward."

Howcroft believes Waterloo Region is very fortunate. "Life long learning is critical.... We are very uniquely positioned in Southern Ontario. UW, Laurier Conestoga, Guelph, we're close enough to Windsor, we're faster, we're the rarified area of Canada... We've got those assets... I'm just conscious of the fact when we say it all works here, that's great, but how many Waterloo Regions are there? There's one! Basically you go to the 10 largest Urban centre in Canada, and it works there, but it doesn't work anywhere else."

"Life long learning is critical.... We are very uniquely positioned in Southern Ontario. UW, Laurier Conestoga, Guelph, we're close enough to Windsor, we're faster, we're the rarified area of Canada... We've got those assets - Ian Howcroft

Lucinda Wallace is Senior Director, Marketing & Strategy, for the Waterloo Economic Development Corporation. She argues that while there are great things about Waterloo Region, there are also gaps. For example, she points out, "We have a really poor high school graduation rates. So we're not educating our teachers or our parents, who have a huge part to play [about how to advise the students concerning employment streams]. When you think about Germany, and some of those other great countries, they very quickly put children in different streams. They identify, then put them in streams for skills training. Right now, the thinking is that you have to go to university. There are kids graduating from university with debt and they can't get a job."

But she says that parents "don't want to hear... that Billy or Suzy should really be looking at a trade... And we don't allow our school systems to talk to parents about it. So we have to start fundamentally... We are losing so many other kids at the other end of the spectrum that could be great skilled workers in the trades."

Chan understands there is work to be done, but he says, "I would venture to guess that Waterloo Region is probably further advanced as it relates to thinking about these things, having actual initiatives already in place, in ways trying to tackle some of this stuff."

And he wonders if the community can serve as an example to the rest of the country. "If that is the case, is there an opportunity to build on that as a lighthouse to the other communities in Canada? Not because we are bragging, but because we incubate some of these ideas here and [could] help other communities."

He asks, "There is a lot of stuff going on, getting ahead of the future of work – why are we not packaging this stuff up and actually story telling this as a Region, because that would be a great way to show people there is actual path forward. ... One thing I think we can use from a national perspective is creating some sort of consistency around how can you actually help people or help organizations figure out where they are, where they need to go and where are the intervention points.... I think there is an opportunity here from a regional perspective to tell the story that we actually are doing this!"

Verma, who comes from Toronto, had great things to say about Waterloo Region: "Your region is doing much better than many others. There is a variety of resources and networks, institutions. What if we were to scale what you do in this area, in this region, to other regions? In the line of leadership in other sectors, you do manufacturing really well, you do IT really well, and I say take these three other counties that are further to the south and west of here, and there might just be a handful of manufacturing companies, and they become your adoptees. And you scale your activities to include them."

Adaptability limits?

There is clearly a will among stakeholders to find ways to adapt to the new world of AI. AI offers an amazing spectrum of

new innovations and opportunities. But it also creates the potential for enormous change and challenge in the job market, especially. Simon Chan says, "It used to be that you would have one paradigm shift in your lifetime; we are going to have four."

There is a widespread concern that not enough is being done to adapt our economic engines to the new reality. Howcroft told the OECD panel, "There is no real industrial strategy for Canada. Other countries – China, Germany with industry 4.0 and Internet ofTthings coming along – they all have a strategy as to how they're going to execute, how they're going to implement. We talked about a lot of it [in Canada], but we never really did what we should have done or could have done. And here we are now, 30 years later, still with the skills challenge. And we need to do more than just talk."

> "Your region is doing much better than many others. There is a variety of resources and networks, institutions." – Anil Verma

The experts gathered together by the OECD are focused on finding ways to develop training and educational opportunities to help workers keep up with the changes in jobs and the need for new skills. And much may be accomplished.

But Larry Smith has some words of warning about all of this. First, he says, the simple truth that we can't really know what is coming in ominous. "You don't want this cloud of uncertainty over the job market," he says. Furthermore, large entities – governments, corporations, industries – are inevitably unwieldy and difficult to change in a hurry.

But there is one other challenge, and Smith suggests it is highly significant – and that is the issue of the need for workers and potential workers to function effectively in a world where adaptability is key to continued employment. AI's impact, he says, means we continually have to function outside our comfort zones.

He says, "Human beings are resilient and adaptable, but there is an issue here that cannot be denied – there is a limit to anybody's adaptability over time."

Participants in the OECD panel talked about the threats to mental health caused by constant change and the demand to adapt. Chan commented that, "The other piece that really cuts through all this in my perspective is mental health... What we're talking about [is], you're going into a world that is rapidly changing, that has multiple paradigm shifts in your life. And you feel like you're never done. We have to tell them, 'you're never done'... I think the mental health piece is something you have to consider – how do we build that adaptability piece a lot earlier in our school systems in our universities and colleges. The adaptability piece in addition to this skills things is a huge challenge."

Have we seen the future?

The future, as influenced by AI, is bright and hopeful, with AI applications bringing efficiency and unparalleled opportunities. Or, it's bleak and dark, with job losses and mental health challenges. One thing is clear – the future won't ultimately be shaped by AI – it will be shaped by how humans use and adapt to it. The future is still in our hands, even if those hands are shaking a bit in fear of the unknown. And that, according to many of the experts, is the real challenge of AI right now – we just don't know. X

LITTLE MUSHROOM CATERING FOCUSES ON TRIPLE BOTTOM LINE

Kitchen grows bigger, service expands and executive event space offers corporations a special place to dine

BY EXCHANGE MAGAZINE

Stephanie Soulis, CEO of Little Mushroom Catering,

For the last decade, Stephanie Soulis, CEO of Little Mushroom Catering, has been building one of the most prominent catering companies in Ontario, Canada, and she's certainly not done yet. This entrepreneur/food lover has grown her business from the ground up. Her strategy has included acquiring businesses along the way, leveraging others that are closing their doors, and recognizing opportunities when they present themselves. She has not been afraid to take the step, and in some cases, deal with the short-term pain.

The young CEO has created a business atmosphere that values people as colleagues and valued stakeholders. Her position on everything from providing a living wage, to concern for the environment and making a difference for those in need, demonstrates the integrity of this genuine and caring individual.

And in business terms, it's all paid off. Soulis attributes her success to her personal values. Personal values are "one of the greatest things about being an entrepreneur. You get to run your business based on your values. I've been able to implement so many policies and procedures – just the general culture here, where we keep sustainability at the heart of everything we do."

She says, "The people thing is really important. We are the only food service company that is 'Living Wage' in Waterloo Region. We are certified through 'Living Wage Ontario'. We're trying to be an industry disrupter, and we've been certified as providing a living wage for the last two years."

Soulis explains why this is so important to her: "I have worked in the restaurant business since I was 16. Most of my staff have grown up through the restaurant business, and then they come to me when they realize they've been abused. It's a safe haven."

This year has been an exceptional twelve months for the one-time geography teacher turned entrepreneur. Not only did she achieve precedent-setting accolades in her own backyards of Cambridge and Kitchener-Waterloo, in July of this year, she was recognized by Food Awards Ontario as Caterer of the Year.

In the nine-plus years she has been in business, Soulis has operated Little Mushroom in Waterloo, then Kitchener, and now Cambridge – each move marking a significant milestone. She started the business out of a home in Waterloo, expanded into a Kitchener facility for four years and then, when space again became an issue, she moved to her present 3600 square foot space in Cambridge.

But Little Mushroom has outgrown that, too, and in early 2020, the caterer will move to a 7,000 square foot space on Sheldon Drive in Cambridge.

Soulis says, "Cambridge has been very welcoming to us, the Cambridge Chamber of Commerce has been fantastic. They have not only welcomed us as a business partner in the community, but have also given us lots of great recognition. We've received three business excellence awards from Cambridge, for sustainability, young entrepreneur and this year we won both the small business of the year award in Cambridge and in KW. I believe we are the first to ever do that."

The energetic CEO operates her catering business with 45 staff. Little Mushroom has a dedicated internal training and development program for on-location staff. This includes an extensive two-day manager's retreat every summer. Soulis is the first caterer to pay employees a living wage, and the first to sign onto Feast On, through the Culinary Tourism Alliance of Ontario. Soulis explains that "we submit our receipts to a third party, to ensure that we are buying a certain percentage of locally farmed ingredients, so that when we say we buy local, we mean it."

Soulis has grown her business by being ready to seize opportunities – even if she wasn't enthusiastic about some of them, at first. She admits that, "When I started the business, I did not want to cater any weddings." But couples planning receptions started coming her way, and Little Mushroom now caters over 80 weddings a year!

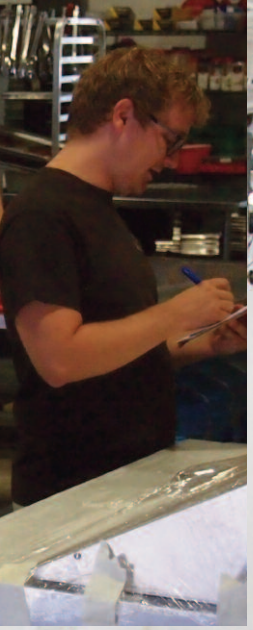
In typical Soulis fashion, she decided that if she was going to do weddings, she was going to do them right, so she employs three WPIC-certified wedding planners. She says, "They not only help the couple plan their wedding menu, but also their entire weddings. Wedding coordination services is something that we have that most other caterers don't."

Soulis adds that all members of the event staff are employees, not temps. "Servers and bartenders are trained by us, they're our own, they know what our values are, and they are on board, 100%."

Not surprisingly, says Soulis, "Our wedding business has taken off."

But then, so has every aspect of the Little Mushroom Catering portfolio. In total, Soulis' team does about 700 corporate and private events a year, ranging from conferences and client appreciation events to staff dinners.

When they move to their new space, Little Mushroom Catering will include an executive dining lounge. "We want to be open for lunches, for afternoon meetings, for happy hour. If you want to bring your staff for a drink after work, and have some sharable snacks, we'll be there



for you." It will offer an upscale quiet space for business lunches and will also have buy-outs available for seminars.

The new facility will also include an improved kitchen, with much more fridge and freezer space. They will continue to operate a full-service bakery, which Soulis acquired when she purchased Nom Nom Treats and added that company's service to Little Mushroom over five years ago. She says it is unusual for a catering company to also have a bakery; it allows her to offer everything from sugar cookies bearing a corporate brand to tiered wedding cakes to gluten-free mini doughnuts, and much more.

To Soulis, every part of the business chain is important – from ethical suppliers to happy customers. She buys locally, as evidenced by her Feast On designation – and she's proud to be the only Waterloo Region caterer with that qualification. She says, "Since Day One, we have been purchasing our meat from Oakridge Acres, a family farm in Ayr." Oakridge produces Black Angus beef and bison, and also supplies chicken, duck and rabbit from other local farmers. Soulis also buys from local foodservice icon Flanagan's, a Feast On purveyor.

When the restaurant opens in the new Little Mushroom facility in 2020, Soulis says, "we want to continue that focus on local, so our plan is for the wine list, for the beer menu, for the spirits, to be using all Ontario products. We recently switched over our coffee to Settlement Coffee Roasters, so as much as we can't get our beans here, we can get them roasted here – and they're fair trade."

Soulis believes in a triple-bottom-line approach to business – focused on "planet, profit and people." But as a WLU Geography alumni, she admits that she is only comfortable with the "profit" piece if that involves being environmentally ethical with an emphasis on sustainability. She says, "We need to make sure that we are being fiscally responsible, but at the same time we are also looking into what kind of compostable containers we can use. We really try to encourage people right now to use re-usables as much as possible. We are always looking at new options, and Flanagans has been a great partner for that as well."

Little Mushroom has "a full composting and recycling program, both here and when we are on site." Soulis adds, "As far as I know we are the only caterers in the region who do that."

The values that Soulis has inculcated into her team are reflected right across the board in the operation. They work hard to limit food waste – always a challenge in the catering business. But Soulis says, "there isn't a tonne left over, but because we keep our food at the proper temperatures, we also donate a lot of food to the House of Friendship men's hostel and the Bridges." They recently joined Food Rescue, an organization that matches food donations to those in need.

That's not Little Mushroom's only community outreach. Says Soulis, "The staff does group volunteering. Three or four times a year, we'll shut down for the day. We've done food sorting at both the KW and Cambridge food banks. We've gone a couple of times to the Gleaners, and helped prep food that gets dehydrated and made into soup mix sent all over the world. We've done gardening at Steckle Heritage farm, and we've packed snacks for kids at Nutrition for Learning."

Little Mushroom Catering does not limit their customer base to Waterloo Region. Soulis is honoured that, "We are Caterer of the Year for 2019 throughout all of Ontario. We cater not only to Waterloo Region, we'll go to London, Woodstock, Hamilton/Burlington area. We've done weddings toward Niagara, we'll go to Collingwood, Kincardine, basically Southern Ontario below Muskoka and West of Toronto proper. We have a two hour rule; we'll cater anything that reaches our minimum spend within a two hour drive."

little Mushroom Catering

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PASSION FOR PROCESS

Simpson Print and Sawmill Display are constantly innovating, to remain industry leaders

"Passion and process." That's the phrase VP Eric Gowland uses to describe the industry-leading attributes of Simpson Print, and its new division, Sawmill Display. Those two words might also be appropriate job descriptions on the subtly textured business cards of Gowland and company president Carla Johanns.

Johanns is all passion and enthusiasm about her company's lineage, originally started by her father, Martin Johanns, under the name Johanns Graphics. She is excited about the wide range of state of the art equipment that allows Simpson to go far beyond traditional boundaries in the printing business. She's thrilled with the growth her company is achieving. And she is entirely passionate about the new Sawmill Display division, a venture that launches Simpson Print into the world of business décor, custom retail merchandising, exhibits and displays, tradeshow and modular systems, and commercial display.

Everyone at Simpson and Sawmill understands that Carla Johanns herself is the best promotional strategy a company could have – the company needs her to be the face of the enterprise – and that's why Simpson has recruited Eric Gowland to join the team as vice president, in charge of operations. Gowland is leading the "process" side of Simpson's winning formula – managing the innovations in equipment and product development required in an industry that is constantly changing.

The history of Simpson Print goes back to 1964, along with Martin Johanns, who came to Canada from The Netherlands and started Johanns Graphics. The primary products at that time were nameplate ID labels for manufacturers. Much of that business was almost lost to offshore companies but in an odd example of the ever-changing world of printing, much of that business has come back to North America, and Simpson continues to hold a share of that market.

But while there are such connections to the past, in reality, customers from that era would not recognize the company – or its astonishing array of products – today. The Simpson website welcomes visitors to "The Luxury Business of Specialty Print... World Class Print... More Than Meets The Eye."

Carla Johanns makes the point that "we don't view ourselves as a local company." Simpson Print and Sawmill Display may be located in Bloomingdale, in Waterloo Region, but their footprint is definitely international. Today, 65% of their business is in the United States (the remaining 35% in Canada), and Gowland expects the US market to grow beyond those numbers.

A tour of the plant on Sawmill Road provides an introduction to an array of printing presses and other equipment involved in the many capabilities at Simpson – high resolution screen print, high-tech wide format digital, small format digital, UV offset – but the truth is, as impressive as the high-tech equipment may be, all of the mechanical elements are simply the means to the end. And that end involves eye-catching, highly creative print products.

The walls of the building are laden with examples of Simpson's work like cosmetics posters that pop with texture and colour; a forest scene on which you can feel the bark; owls with eyes that gleam with depth and colour. "Luxury Print," indeed.

Simpson is quite clearly doing great work, with a team of 58 people. They're an industry leader, with their work on demand across the continent. They have loyal clients as far away as San Francisco, clients who won't allow anyone else to do their work. Carla Johanns says that they are seeing an uptick in revenue and profitability every year – with revenue increasing from about $9 million four years ago to $11.7 million today.

So with business going this well, the obvious thing to do is... change. Change, because Carla knows this is an industry that must reinvent itself every couple of years, or face stagnation.

That reinvention comes on a number of fronts. The most obvious, today, is the creation of the new division, Sawmill Display. But there is also a focus on sustainability – in an industry known for the use for environmentally unfriendly supplies (especially plastics) and chemicals, Johanns is determined to be increasingly green. Johanns knows this concern is only going to become more important – consumers are going to demand environmentally friendly products and sustainable operations – and she says, "I'm going to make sure we're a leader in this." She credits her father with a life-long commitment to environmental awareness; today, in retirement, he personally plants thousands of trees every year.

And there is the reinvention of the workplace – during a tour of the 80,000 square foot plant, Johanns points to all the changes that have been made – and will be made, soon. She refers to equipment that is becoming outmoded, and talks about the new presses and other equipment that will be added to the operation. In fact, in the past three years, Simpson has invested $2.5 million in new equipment... and counting. The workplace is also changing through a focus on employee morale; there are welcoming spaces for employee breaks and relaxation, and the company has formed a "fun committee."

A lot of the financial investment concerns the newest venture, Sawmill Display. Johanns says this division is "our answer as to how you diversify." It's a response to the changing world of retail. Specifically, Johanns and her team identified the rapidly growing trend to "pop-up" retail – temporary but sophisticated marketing spaces. Someone has to produce all of the elements of these spaces, from dramatic imagery to modular systems to display hardware.

Sawmill Display does all that, and more. If you are still thinking in traditional mode about printing, you'll be surprised at products like small display cases made from acrylic, wood and aluminum composites; three-dimensional murals; display units that double as stand-up tables; and (literally) almost any element you could imagine.

Of course, Sawmill does more than pop-up retail facilities; the same innovations can be applied to any space – commercial, retail, institutional. Overall, says Johanns, "the industry trend is toward "high-level printing, more custom printing, more pop-up shops."

Johanns says that Sawmill is an ideal offshoot of Simpson Print; the parent company can today produce all of the materials incorporated into the new products. Today, space in the plant once occupied by a now-outdated printing press has been re-commissioned as what Gowland describes as "our pop-up woodworking shop."

VP Eric Gowland and company president Carla Johanns

When Johanns considers Sawmill Display, she sees the future. This year, the revenue target for Sawmill Display is $1 million, but the company president predicts that, within ten years, Sawmill Display will "eclipse" the parent, Simpson Print.

At that point, says Gowland, while Simpson will continue to be the major supplier to Sawmill Display, the company will have to outsource some supplies, providing business to other independent companies such as woodworking firms.

Gowland joined Simpson Print in August of this year, after getting to know Carla Johanns and learning about her goals for her business. He explains that she has focused – very successfully – on "driving growth," but needed help on the operational side – his area of expertise. Says Gowland, "This company has one of the most diversified bottom lines... I am very enthusiastic about the future of this company."

Gowland has described Simpson and Sawmill as a company with "passion and process." Johanns adds the descriptors, "versatility and flexibility," explaining, "We are adaptable to any volume, any size, any deadline."

This commitment to creativity, constant innovation, customer service and retention – and making sure everyone on the team enjoys the ride – has made Simpson Print an industry leader. And Carla Johanns and Eric Gowland are dedicated to maintaining that status, for the good of the company, its clients, and its employees.

Simpson SINCE 1964 PRINT
SAWMILL DISPLAY

865 Sawmill Rd, Bloomingdale, ON
1 800-387-3214
www.simpson-print.com

ARE OVER-65 PROFS BLOCKING YOUNG CAREERS?

MIT professor asked the question … and the answer changed his life

BY EXCHANGE MAGAZINE

More Canadian university professors are staying on the job after age 65. That's according to a report from the Higher Education Quality Council of Ontario. The report says that since mandatory retirement was banned in the province, in 2006, the proportion of university faculty over 65 grew from close to zero in 2006 to almost 9 per cent in 2016. That represented 1,239 working professors over 65, with more than a third over 70.

Earlier this year, the Ontario government introduced the controversial step of banning professors from simultaneously receiving their pension and a salary as a tenured professor, essentially meaning that professors on pensions would be teaching for free.

> "Mandatory retirement age in the US right now is infinity. So if you can figure out a way to live to a thousand years old, and if your university lasts that long, you could have tenure, in theory."

The report also found that the number of professors under 45 had declined by the same percentage – 9%.

This begs the question, if 65-plus professors don't retire, are they preventing younger academics from being employed at universities? R.C. Larson is a professor at MIT who carried out a recent study on exactly that question, albeit in the American context. Larson was surprised by the findings – so surprised, in fact, that it changed his life. In an exclusive interview, Larson told Exchange, "In the US, when I was hired at age 25 as an assistant professor at MIT, I was told, 'Dick, when you reach 65, you must retire, it's federal law'. As a 25 year old, with an infinite future, I thought I should be lucky to live so long – that's not a problem.

"As time went on, Congress changed the laws, to change it from 65 to 70. Then there were complaints that putting any age on it at all is 'age discrimination,' and there was lots of debate in Congress and around, and eventually mandatory retirement ages were terminated for all people other than professors who have tenure, because they thought tenure was a special perk, which really shouldn't be allowed to go on forever.

"But in the early 90s they finally changed it for professors too, to allow them to go on. Mandatory retirement age in the US right now is infinity. So if you can figure out a way to live to a thousand years old, and if your university lasts that long, you could have tenure, in theory." And that was Larson's personal experience. He continued as a tenured professor for several years after passing the age 65 milestone… until he was asked to study the issue.

He told Exchange that he did not expect his study to impact his own life. In fact, his "initial intuition" was that eliminating mandatory retirement had had "no substantial long-term effect."

That intuition, he admits freely, was "wrong." MIT has a fixed number of tenure-tack faculty slots – 1,000 in total. The study revealed that eliminating the retirement age had reduced the number of new slots for MIT assistant professors by 19%, from 57 to 46 per year. Senior faculty members were reluctant to leave.

His findings not only produced an important research paper – they inspired some personal introspection. Larson says, "I said, 'Take a look in the mirror – you have to relinquish your tenure, to allow a younger person to have that slot, because MIT only has a thousand slots, so to open one up, somebody has to leave'."

In an article in the prestigious magazine, Science, he wrote, "I began to realize that I and other professors older than 65 were blocking the way of many young scholars who seek academic careers."

And so, he left – Larson resigned his

tenure-track position, to make room for a young academic.

But it worked out better than he had planned. He laughs, remembering, "I didn't even realize that I had a payout! I didn't expect that or ask for anything. I just said, 'I'm quitting this because we need a young person to start a career here. I'm stopping somebody else's career by staying'."

But he didn't just receive a payout. He calls himself the "co-inventor" of a new professorial designation at MIT – the position of post-tenure professor. After the study was published – and reported in his article in Science magazine – he was invited to be the first "post-tenure professor" at MIT.

He explains, "I'm paid five per cent of my usual salary. I have no boss. I still have my office, I still have my parking spot, and I'm still a professor, I have all the privileges, I can supervise students if I want, be a principal investigator on research grants, but I don't take up a slot. I feel good about that." If he receives research grants – not a high priority at this time, according to Larson – he could be paid up to 49% of his previous salary, from the grant funding.

> "Take a look in the mirror – you have to relinquish your tenure, to allow a younger person to have that slot."

But he's more interested in his volunteer work. The position gives him the opportunity to follow his current passion: "MIT Blossoms." Through this program, Larson and his colleagues are "creating open educational resources for high school math and science and engineering classes. We're contributing to society. We have ten country partners, eleven languages, and we're giving it all away." The program is in its twelfth year.

Larson is sharing his vision for life after tenure. He told Exchange, "In fact, at MIT, I have been designated as the go-to guy to talk to if you are a senior professor who is contemplating doing what I did. So far, I have had three clients each spend an hour with me in my office, talking to me about things they might be uncomfortable talking about with an administrator, particularly the psychology and emotions with leaving a tenure slot that you likely have been in for decades."

Again, there is no remuneration involved. He says, "I do that totally as a volunteer. I love MIT. In my professional life, it's been a very excellent place for me. To the extent I can give back, I'm happy to do that."

Larson told Exchange that he was not up to date on the situation in Canada, regarding mandatory retirement for professors. However, when discussing the efforts to limit professor's professional lifespans, he said, "It sounds like in Canada you're going backwards. You're trying to impose these things [limits on age for professors] now. I'm just thinking about the havoc that would happen here if you passed a law that said, never mind the amendments, we're going back to 65. All hell would break loose."

He observed, "My hunch is... I haven't studied the Canada situation... but if Canada were to alter that law to switch [retirement age] from infinity to 65, they'd have to do it retroactively, only for new hires. If you did it for new hires, there would be no problem, because that would be the rules of the game from day one."

But while he predicts "havoc" resulting from any effort to re-impose mandatory retirement, he also believes something should be done to deal with professors whose careers are never-ending stories. He asked, bluntly, "What do you do with the deadwood who's 80 years old and still has tenure? Not that all 80-year-olds are deadwood, but some of them are. Some 66-year-olds are deadwood. So what do you do with them?" Clearly, he believes the MIT solution – his own situation – offers a great option. But Larson also suggested, "You can offer enticements... cash payouts, or go half time, or a fully funded two-year sabbatical before going emeritus."

Whatever the specifics that might be offered to over-65 professors, it's clear that Larson would encourage them to accept the opportunity. In Science, he wrote, "I submitted my tenure resignation in 2017. I've enjoyed every minute since, busy as ever but only on activities I select... I feel lucky to have this option. Too few institutions offer these types of transitional positions to ease the challenge for us senior professors. At 74, I in essence removed 9 years from someone else's career. I should have stepped aside sooner." X

STORYTELLING CAN MAKE THE DIFFERENCE

Businesses using "substandard" tools and ignoring storytelling

BY EXCHANGE MAGAZINE

There's no doubt that "story telling" is both a trend, and the "new big thing." But the truth is, it's also an essential part of marketing your business, and perhaps the most effective way to capture the attention and interest, both of potential clients, and of your existing customer base.

Exchange magazine has been published for 37 years; that not only identifies us as survivors, it also would suggest we are experts in the art of storytelling. For many of our readers, we have told your personal story at some point.

But businesses and organizations need to look beyond occasional articles or interview opportunities; effective storytelling is essential for every organization, no matter what industry you may be in. Being a good storyteller makes you more compelling, engaging, and persuasive – and that's all good for your organization, both internally and externally.

Because it is not only your clients who need to know and appreciate your story – it's also your employees. A compelling story is a great tool to boost morale and encourage loyalty among your team. In a world where data has become king – see our in-depth feature on AI and its impact, in this edition – storytelling is what makes the data matter.

Kindra Hall is one of the leading experts on storytelling for business. Her latest book, "Stories That Stick: How Storytelling Can Captivate Customers, Influence Audiences, and Transform Your Business", was published in September of this year. Hall, who lives in New York City, is President and "Chief Storytelling Officer" at the consulting firm Stellar Collective. She agreed to provide her report, "The Steller Storytelling Method," for the use of Exchange magazine and our readers.

Hall says, "The moment you take control of your stories, you take control of your business and your life."

Hal argues that businesses are relying on "substandard but generally acceptable tools they know, like infographics and PowerPoints, to engage audiences" in their efforts to motivate sales teams and win customers away from competitors. But she contends that businesses using only those tools are "neglecting the one resource that makes the most difference and that, whether they realize it or not, they all have access to: stories."

But the author says that it's not as simple as starting to tell your story. She says, "You keep hearing how story is the latest-and-greatest business tool, and that storytelling can do everything – from helping leaders better communicate to motivating sales teams and winning customers away from competitors. But what stories do you need to tell? And how do you tell them?"

> "A perfectly placed, impeccably delivered story can transport a person to a place beyond interested, straight past paying attention, and into a state of complete captivation."

Hall argues that, in fact, all businesses have four stories they can tell. She details them in the new book: • the Value Story, to convince customers they need what you provide; • the Founder Story, to persuade investors and customers your organization is worth the investment; • the Purpose Story, to align and inspire your employees and internal customers; and • the Customer Story, to allow those who use your product or service to share their authentic experiences with others.

According to Hall, "Telling these stories well is a simple, accessible skill anyone can develop." With case studies, company profiles, and anecdotes backed with original research, Hall contends that storytelling as the under-utilized talent that separates the good from the best in business.

She adds, "A perfectly placed, impeccably delivered story can transport a person to a place beyond interested, straight past pay-

The most important sustainability effort in the Grand River Watershed is *rare*.

"From more than 30 years in finance, planning and product management, I can strongly assert that we will never be at the forefront of any economy if we continue to destroy the environment. The effort to *Turn the Map Green* at the ***rare*** **Charitable Research Reserve**, a Grand River watershed land trust and international environmental institute, gives everyone the chance to participate in work now being shown to make the biggest difference — an ecosystem-based, landscape-scale approach that protects multiple species, while doing important research and using our knowledge to educate the next generation of responsible land stewards."

— Gerry Remers, Former President & COO, Christie Digital Canada & former co-chair Communitech

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ing attention, and into a state of complete captivation. The 'Oh no, I just missed my exit,' kind. The shift a story can make has a profound impact on business. It turns customers into converts. It transforms employees into evangelists. Executives into leaders. It changes the nature and impact of marketing, and perhaps most importantly, it can change how we see ourselves."

But Hall is insistent that "Not all stories are created equal." In the Stellar report, she writes, "There's a lot of buzz about the power of storytelling. Celebrities, authors, and gurus like Richard Branson, Tony Robbins, and Maya Angelou talk about the impact storytelling can have on your life and your business."

> "Businesses no longer have the luxury of creating mediocre content.. If you want your product or service to stand out, your message has to stand out."

Hall points to "the unlimited opportunities for sharing content and engaging with customers, combined with the growing desire of employees to work for individuals who are purpose-driven and authentic." She says, "It's no wonder storytelling has received more attention in the last five years than in the previous thirty."

Hall even contends that, "When done right, storytelling can solve even the toughest business challenges. Relationships become easier to build, sales become easier to close and complex concepts become easier to convey."

But there is a problem – and Hall is working to be part of the solution. The problem? "More awareness around storytelling has not resulted in better storytelling, or even good storytelling. Storytelling efforts frequently fall short – for both brands and leaders alike."

So how do storytellers succeed? Not surprisingly, Hall believes she has found the answer, and is eager to tell her story about that. In the report provided to Exchange, she writes, "Like football teams have winning plays and restaurateurs have winning strategies, there is a formula to crafting great stories. Through decades of experience, analysis and field work, four story components stood out as being part of the winning story formula."

Hall says those components include: • An identifiable character: the story must include a specific person or persons the audience can identify and connect with. • Authentic emotion: the story should include the emotions that the character experiences. • A particular moment: the story happens at a specific moment in time and place. • A specific detail: the story includes specific details the audience can visualize. In her report, Hall states that "according to our research, the more of the components the story includes, the more effective the story will be. Including all four components yields the most positive results."

The history of storytelling supports Hall's contentions. In fact, to cite two wildly different – and perhaps antithetical – examples, both Mark Manson and Jesus Christ have clearly understood these principals of storytelling.

Jesus? Consider the story of the Good Samaritan, with a very identifiable character (the man left beaten in the ditch), a clear depiction of that man's emotions, a very clear description of the setting, and specific details about how the Samaritan treated him, right down to how much money he left ("two denarii") for the man's continuing treatment. This story – perfect, by Hall's cri-

teria – has survived and been re-told for more than 2,000 years.

Mark Manson, in considerable contrast, is the mega-selling self-help author of two books, including "The Subtle Art of Not Giving a F*ck". This, his first book, has sold more than six million copies. His goal is to offer self-help guidance, but Manson launches almost every chapter with a detailed story about characters either historical or personally known to him. And they work; by the time readers get to the more complicated stuff, an anecdotal understanding fostered by the story has already captured their attention and their emotions.

In her report, Hall argues that stories must be ever more compelling to capture attention. "When it comes to messaging, the world has never been noisier," she writes. "Businesses no longer have the luxury of creating mediocre content. Consumers are constantly inundated with videos, images, and text, both virtually and in life. If you want your product or service to stand out, your message has to stand out. If you want to be heard among all of the noise, your story must compel people to listen."

How? Hall suggests that a key element has to be that the story is entertaining. She writes, "Recent studies reveal that the average adult, age 18 and older, spends four hours a day watching television, with those over 65 watching nearly seven hours a day, and binge-watching has become an acceptable hobby. Humour, action, drama – the desire to be entertained is as prevalent today as ever."

Therefore, she says, "With that in mind, businesses and leaders would be wise to approach their messages with the entertainment-element in mind, creating messages that entertain, and educate or instruct."

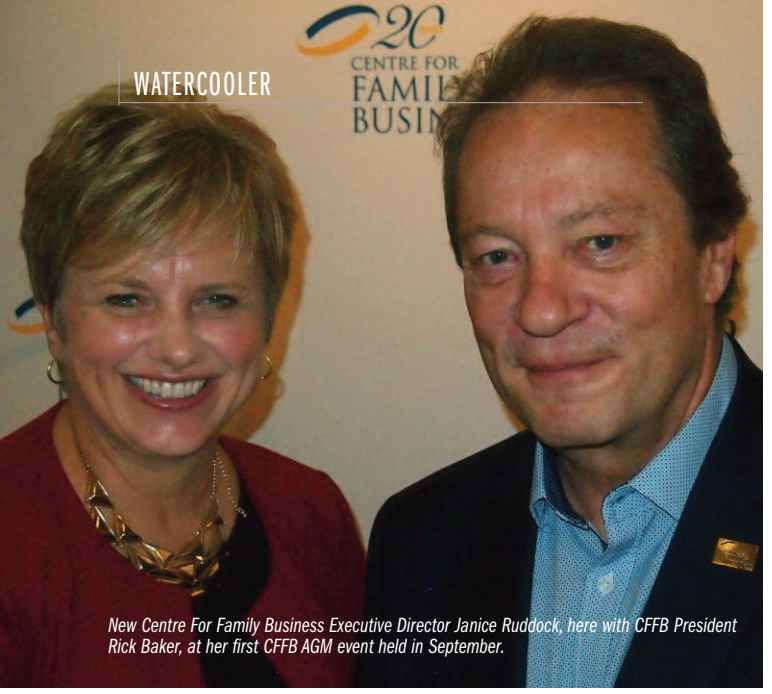
Humour, action, drama – the desire to be entertained is as prevalent today as ever."

Hall says that if your story doesn't attract the attention of your desired audience – potential clients, current customers, your team members – then it fails. She writes, "In this age of refined taste, brands and leaders must pay close attention to what garners the attention of their desired audience.... The importance of attention goes beyond philosophy. And while it appears as though human attention spans are shrinking, it is more likely that attention is simply becoming more selective."

Hall adds, "Forgettable is expensive." She asks, "What would marketing look like if the messages lasted beyond one spend cycle? What would it mean for brand loyalty if messages stuck with people?" She insists that "when it comes to advertising, 'Frequency is the price you pay for not being interesting.'" She invites her readers to "Think for a moment about the money spent on getting a message out to the marketplace. Most companies overpay for their exposure to the marketplace as a result of their ineffective messaging."

Hall argues that effective storytelling is a persuasive method of communication. She says, "Influence is an essential element of successfully growing revenue. Sales efforts live and die on the ability to persuade customers and stakeholders to say yes to the product or service you offer."

Hall believes that "using storytelling in business is not about talent or charisma. It doesn't require a marketing degree and isn't 'unavailable' for accountants, attorneys, CFOs or any of the other traditionally technically-minded team members. Storytelling is a skill and a system that can be taught and applied, regardless of personality or how well you did in creative writing classes." X



New Centre For Family Business Executive Director Janice Ruddock, here with CFFB President Rick Baker, at her first CFFB AGM event held in September.

JANICE RUDDOCK HAS BEEN NAMED Executive Director of the Centre for Family Business. Janice spent 10 years leading a successful Nova Scotia non-profit association, Taste of Nova Scotia, which included 187 members and numerous affiliated companies. Janice (left) is also a partner in her own family business which grew from a staff of five in 1999, to today where over 250 people are employed across Ontario and Nova Scotia. Janice intimately understands the challenges and rewards of family businesses plus the many facets any business has to manage in today's competitive, fast-paced environment. She commented, "I am honoured to have the opportunity to lead such a vibrant organization as Centre for Family Business. It is a very special organization to provide support and education which is vitally needed when facing so many unique business and personal questions operating a family business."

AI TECHNOLOGY from Waterloo has made a big impression at Audi, the German automotive giant. Since announcing a partnership last year, the two companies have worked to apply artificial intelligence to the development of the electronic brain behind autonomous vehicles. Using DarwinAI's technology, Audi engineers saw a 90 per cent reduction in the number of hours spent processing and refining data for an artificial neural network that simulates the human brain's ability to make decisions, learn and adapt. DarwinAI's technology helped create neural networks without a heavy hand from human programmers, and the end product was more compact with lower computational costs. This reduction in cost and size helped make a neural network a viable option for this type of application – historically, neural networks have been too large for consumer electronics. Overall, the companies reported that the number of hours programmers spent refining models was reduced from 200 to 17 and the number of hours spent processing the data dropped from 10,400 to just 760.

Mary Jo Fedy announces KPMG as the anchor tenant of the new Glove Box, while developer Don Zehr looks on.

THE HISTORIC HUCK GLOVE BUILDING, a key part of the new Garment Street development in Kitchener, will be the new home of professional services firm KPMG. KPMG's Waterloo Region office will move from its current location on King Street South in Waterloo, in September 2021.

KPMG managing partner Mary Jo Fedy has said, "Our desire to blend a rich, deep history with the present and the future matched the vision of the developer and the project." KPMG will be the anchor tenant of the repurposed, historic structure, newly dubbed the Glove Box.

STARTUPS IN THE FIELDS OF BIOTECHNOLOGY, energy and urban-air commuting were among the winners of the Velocity Fund Pitch Competition, as the University of Waterloo's flagship entrepreneurship program brought its marquee event to downtown Toronto for the first time in its history. The four winners, who each received direct equity investments worth $50,000, were chosen from a slate of 10 finalists who made their pitches in front of a sold-out crowd. SquidBio, a biotech company that has developed a benchtop DNA synthesis device, was among the recipients of the grand prize. With their printer, researchers will be able to synthesize DNA and put it into bacteria to solve real-world problems in-house and on their own time — cutting down on costs and the weeks it currently takes to have the same product ordered and delivered.

Three other start-ups won an investment and will contin-

ue to work at or be admitted to the Velocity startup incubator:

Maple Precision is building an online mapping platform, similar to Google Earth, but with millions of geographic data sets that city builders rely on. Stacktronic is developing a rapidly scalable, modular battery platform that simplifies and expedites the design process for electric powertrains, allowing any vehicle, of any size and production volume, to be battery-powered in an instant. Watfly is building "Atlas," single-seater air vehicle powered by the latest in electric propulsion technology.

FLANAGAN FOODSERVICE HAS WON the 2019 Pinnacle Award for Supplier of The Year. Since its introduction in 1988, the Pinnacle Awards have recognized the full spectrum of achievements in the Canadian hospitality industry. The awards shine the spotlight on companies and individuals that have demonstrated excellence in the areas of leadership, initiative and business excellence. The Pinnacle Awards epitomize the best characteristics of the foodservice and hospitality industries, highlighting innovation, creativity and successful business strategies. Winners are selected by a group of industry leaders.

WATERLOO'S OPENTEXT has announced that Gordon A. Davies, Executive Vice President, Chief Legal Officer and Corporate Development, has received the prestigious Chambers GC Influencers award, highlighting pioneers among the in-house legal community.

CONESTOGA COLLEGE RECENTLY APPOINTED Tony Thoma to the role of executive dean to the Schools of Engineering & Technology, Trades & Apprenticeship and the Institute of Food Processing Technology. The announcement was made following Dr. Julia Biedermann's retirement after more than two decades at the college and nearly six years as executive dean. A respected leader in education and heavy industry, Thoma comes to Conestoga from Niagara College where he held positions in administration and special projects focusing on engineering technology, skilled trades and applied research.

IN CONJUNCTION WITH THE TAPHOUSE grand opening and its legacy of craft brewing leadership, Waterloo Brewing has committed to a three-year scholarship commitment to the Brewmaster program at Niagara College. Waterloo Brewing has officially opened the doors of its brand-new Waterloo Brewing Taphouse and expanded Beer Store. "The Taphouse represents the crown jewel of our hometown brewery and the culmination of a five-year transformation of our facility from a distribution centre to a 'must see' craft brewing destination," declared George Croft, President and CEO, Waterloo Brewing. "We are Ontario's first craft brewer and our new Taphouse is an outstanding tribute to that legacy of craft brewing leadership."

CHARLENE HOFBAUER WILL BE the new Executive Director of the Workforce Planning Board of Waterloo Wellington Dufferin. Charlene worked with the Workforce Planning Board previously for eight years, from 2008 to 2016, before moving to the Workforce Planning Board of Grand Erie. Her most recent position was with the Thames Valley District School Board as System Staff Development Coordinator.

UNITED WAY WATERLOO REGION COMMUNITIES has announced the appointment of five new members to its Board of Directors as well as seven new Campaign Cabinet members. Moving from his role as UWWRC Cabinet Campaign Chair, Samson Ling, President and CEO of Clarion Medical Technologies, has assumed the role of Board Chair.

PEACEWORKS TECHNOLOGY SOLUTIONS, a Certified B Corporation since 2011, has been named a Best For The World honoree in recognition of their company's positive impact on the environment, their workforce, their local communities, their suppliers, their customers, and their corporate governance.

JAMES E. WAGNER CULTIVATION CORPORATION has announced the receipt of a cultivation license from Health Canada for its second indoor production facility, which, at full scale, is expected to be a 345,000 square foot commercial production and distribution complex. JWC received a license amendment from Health Canada allowing for the sale of formulated cannabis oil from JWC's pilot facility in Kitchener, Ontario.

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Valerie Bradford from the City of Kitchener, Carol Simpson, and Charlene Hofbrauer, new Executive Director at WPBWWD.

Continued on page 28)

mechanical technicians and technologists ... more to the technologist end than the technician end," she says.

We're starting to see a larger shift towards skills, she says, skills which are taught at our post secondary institutions, notably at Conestoga College, which has championed the needs of community. It's an indication that learning new skills, is key to employment, especially in the automation and AI reality, a reality that is fast approaching, and for some, already here.

Unbeknownst to them, people have become life-long students. And that's a pretty awesome thing. Today's college graduates are closer to the engineering, university level than ever before. Simpson highlights this as one area no one really thinks about, echoed in the OECD Future of Work roundtable as a growth area. A continuing problem is that, in most high schools, the concept of skilled trades is essentially ignored.

Over the last 19 years, Simpson has developed a high level of expertise in the area's labour market. She's smart, she's frank, and she's real. "I think it's the nature of the jobs that are changing, as opposed to the people in the jobs". Sure, automation and technology is shifting, and that won't stop. What that means to employers is that when hiring, employees will "sort of come into the job and then grow that job," if they're allowed to do that. "Before, they didn't have to change, they just kept doing what they were doing." The flexibility to accept change is not really new, but it is a reminder of what headspace business owners have to have. It's a "mindset thing," she says, meaning that people now realize that they're going to be walking into a job and not doing it the same way five years from when they started. But they still have to produce value. "I think it's happening so gradually, over time, that people are not recognizing that they're learning new skills, and that they're taking them for granted."

But not in all cases. "We just did a worker survey, [and] what we found is that a good percentage of workers were using their skills, 75-100% of the time on the job." These employees felt that their skill set was "adequate for the job." She continues that there was probably a small percentage who said they weren't using their skills at all. But as a outcome of the survey, "a lot of people feel that they're getting the opportunity to constantly use their skills" and that's a great trend.

It's all in the way that employers present it to people. Like most of us, Simpson has been introduced to new technology throughout her career. She highlights that the board have had "new technology at their office ... that I don't personally understand – but I make it work." Does she have time to learn the whole skill set? "No," she says, but then says that she thinks "that's kind of what's happened. I don't need to know everything, I just need to know this skill."

A lot of people assume technology is changing their job. In many cases, they're adjusting well. "In some cases... it's going to be a very sudden shift. But I don't see too many occupations where it's going to be that drastic,", she predicts with a smile.

Simpson highlights two sectors that are going through significant changes: restaurants and grocery stores. At one time "all you really had to do was smile, and be able to count some change. Now, you've got to be able to read digital maps, connected and online." The emphasis here is that "It's a tool." Scanning, product ordering, self check-outs, maintaining those services require skill sets. It's part of the evolution of jobs, "and I don't hear too many people say, 'I really don't want to do this, I'm going to quit'."

"This over-arching perception that jobs are going to change

so drastically, so quickly, that people are going to be left behind, I don't see that that's a reality." Employers will use the efficiencies gained, and remove inefficiencies. They will redirect human resource where the human resource are needed. It's fundamental, and perhaps the secret of progress, for survival and the underlying principles of rational people.

If you look at companies that have purchased new equipment, and at first, thought to replace people, that was wrong. Technology can redirect people with new efficiency. Says Simpson, "What it does, is make the job easier. Sure, they may lose one or two jobs, but it's not like hundreds of thousands. I look at the evolution of jobs, I look at my husband's job – he's been in manufacturing for almost 30 years. When he started, it was grungy ... chemicals, whatever, now they've got machines to mix that stuff up, they have labs, and very precise equipment. He's a smart guy, but he had a high school diploma. He's kept up with that all through his career, as have all the people that he's worked with." It was learning on the job.

"A lot of people come up with this doom and gloom, AI is going to do this, it's going to change this, it's going to do that... We've been living with it for years. It's just the format that is going to change, not the actual impact." People will learn new skills "very gradually", she says. Simpson adds that, "If people leave they may not be replaced, but that's fine because we're running out of people." Which translates to a labour shortage. There are opportunities for people, to be retrained, find other employment, but the question is at what pay scale?

Part of the cause of this labour shortage, says Simpson, is that "We're not producing enough kids, we're running out of people across the board, we need more workers, we need more people in the labour force, people are moving into the region but they're not joining the labour force." More and more people are "living here but they're not working here," she says. What Simpson has seen for the last four years, is that 5000 people are still coming into the community annually, but it's not being reflected in the labour market. So people are coming into the community, "but they're not working here."

"We're running out of people across the board, we need more workers, we need more people in the labour force, people are moving into the region but they're not joining the labour force."

She adds that, "In this area in particular, we see a lot of people leaving the labour force, in their 50's and early 60's." What happens to these people is that, they're moving themselves away from that employment perspective, to something else, "to start a business", not on the WPB radar.

She says that even things like finance and insurance are struggling to get people, "The number of people available to fill the jobs currently open is diminishing, and it's diminishing right across the country."

Simpson says, "I think people don't realize that they are developing skills everyday. And as systems change within a organization, or a company, I think back to what I was doing 20 years ago and what I do now. I wasn't involved in skills development. But I wouldn't think about all the skill that I've developed, over that time." X

CAROL SIMPSON: 19 YEARS OF WORKFORCE PLANNING

Kept a keen eye on the state of the labour market

Carol Simpson

BY JON ROHR

Exchange recently caught up with Carol Simpson, who for the last 19 years has been an instrumental stakeholder in the understanding of workplace challenges. This, not only in Waterloo Region, but also, Wellington and Dufferin Counties.

Simpson, who has served this community well, will by the time this issue is published, have moved east, and will be sipping coffee on her porch looking over the St. John river, since she moved to New Brunswick in September. Over the next several months, Simpson will finish some projects for the local planning board.

Exchange has followed this advocate of future labour for 19 years, and we would be remiss to not include her as a "Making a Difference" in our journal of Waterloo Region. So we connected, for a pleasant catch-up, but also to talk about jobs, the future of skills, and what effects automation, and AI will have on the labour market of the future.

> "This over-arching perception that jobs are going to change so drastically, so quickly, that people are going to be left behind, I don't see that that's a reality."

The Workforce Planning Board of Waterloo, Wellington and Dufferin (WPBWWD) leads workforce development by identifying local labour market needs, trends and priorities. They work in health care, transportation, manufacturing and "a bunch of other things". They help to enable Waterloo Region to be Waterloo Region, the unique destination that then permits Waterloo's regional economic board to sell all the positives inherent in the region. Under Simpson's leadership, the WPB community has grown and prospered very well. Exchange asked Simpson how AI and automation will affect our local labour pool. Simpson acknowledged that there has been a great deal of talk around the future of work. In particular, she noted, that there is a 36-country study being done including this area, by the OECD Employment and Skills Unit (see page 6).

We've all heard about the future of the transport industry. It's getting a lot of attention, around self-driving trucks, electric driverless vehicles and 24/7 efficiency. Simpson believes that is all possible, "that it will come, but it's going to come a lot slower than people think, because of what we're hauling and who we're hauling around."

"Ultimately," she says, "once the safety factors have become addressed it will come around".

That's one industry, manufacturing is another. For example, over the last 10 years, there is a belief that a lot of the manual labour jobs have been replaced by automation, Simpson believes that "a lot of that would have happened over the next five years, automatically, sort of organically." She cites the 2008 recession as a trigger for manufacturers to "let a lot of people go, as they started looking at automation."

In the Waterloo/Wellington economic basin, "a lot of that work went very quickly." But that's just half of the situation. "What we're seeing now," says Simpson, "is that there are still opportunities for people, to learn new skill sets... we're looking at things like

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