By Joel Levitt

The last 30 years

There is one overriding change in the last 30 years. You might think it is computers and you'd be partly right. You might think it is about software, networking or the Internet and you'd also be partly right. It is indirectly about all these things.

The second thing about this change was what it meant for the next 30 years. When I realized what the consequences might be, shivers ran down my spine. I think every Canadian should be sweating as they think through the consequences of this change.

Every industrial sector will be changed. I'm not one who thinks all change is good (especially for the changed). If there is any question about that just interview a few guys who used to build cars!

To give you a sample of the greatest change in that last 30 years I want to recount some details from a few classes I recently taught. The first class was on Maintenance Planning and Scheduling. The venue was Kingston, Jamaica. It was in the autumn, just before the US Thanksgiving holiday in 2006. The attendees ranged from mining, to resort maintenance and from government to food processing. With the exception of no one from the oil patch it could have been a Canadian group.

There were 3 women in the group (which in itself is a big change since 1977) and most of the attendees had college degrees (that would also be a big change since 1977). They were grappling with high energy costs (some things seem to keep coming back) and an almost constant pressure to improve performance with fewer people and lower MRO inventories. I believe that the details of the pressure on middle management have changed but there were pressures in 1977 to be sure. Anyone who says it was easier then was probably not in a leadership role then.

During the coffee breaks and meals people jumped onto their cells and called their offices, wives, girlfriends and who knows, a few might have been talking to their bookies. A good number wandered over to the atrium where they could get a wireless signal and checked their E-mail and surfed.

The second class was on Maintenance Management in Singapore just a week later. The attendees were more skewed toward oil and sophisticated manufacturing. Attendees were from China, Malaysia, Vietnam and Singapore.

The single biggest complaint that this group discussed was the constant pressure to reduce the cost per unit of manufacturing. So the oil guys were struggling to lower the

maintenance cost per barrel and the wafer guys were trying to reduce the maintenance cost per wafer. Everybody was trying to increase the yield of what ever their facility did.

The coffee breaks were the same as Jamaica with people running to use their cells and laptops. They were also sharing spread sheets discussion various points about their home brewed analysis of the data. One guy had a really cool report back in his office. He had someone from the office E-mail the report to him. Using his Jump drive he gave out copies to a few managers who saw a need and who thought they could use that approach. I also got a cool photograph of a stupid maintenance trick (which I collect and display – without names, of course).

Both groups seem pretty typical for the times. Of course 30 years ago the people used phone booths (remember them?) and if there was a report they had it faxed to the hotel fax machine. But that was a pain so it happened less often.

We are wiz-banged by the technology and think that is the big change. I say the technology is superficial and the change is deeper, and may not bode well for Canada and the US. Underneath the technology are people who want a better life and companies want more profit. That part of the picture has not changed in a long time.

Let's go back 30 years. There were computers (minis like the HP 3000, PDP 8 and IBM S34) and mainframes (mostly IBM). There were PCs since 1975 but not in the hands of businesses. There were software packages coming out then for managing the maintenance function. These were massive packages that had people-years of development behind them. They trended to be expensive (suitable for the elite or best of breed of each industry) and access was restricted.

For those of you not old enough to remember in 1977 we used computers (even then) for scheduling. Well the actual shop was scheduled using a sheet of Plexiglas that had a blue print behind it with the crews along the top (making up columns) and time along the side (making up the rows).

To schedule a (planned, of course) job we wrote in the work order number in a block on the Plexiglas. The job block was as long as the amount of time the job would take (the estimate). The supervisor could scan the board and see what should be running at any given time and what was behind schedule. Oh yes, we used a computer.

We had rented a timeshare connection on a Prime minicomputer for $800 a month (a bargain). The connection was dial-up with an advanced 1200 baud modem (25 times slower then a dial-up connection today). I wrote a BASIC program that would report the percentage of jobs that were completed on time each day (called schedule compliance) and roll the totals up for the week and month. We were so happy to have that system; we were really in the computer age!

The thing about these old maintenance systems was not their primitive interfaces. They were primitive to interact with. It was that the algorithms used to look at the data and the level of analysis HAVE NOT CHANGED IN 30 YEARS!

In meetings we discussed sophisticated ways of creating data dashboards, KPIs, exception reporting and how to incorporate artificial intelligence into the systems. In fact, the scheduling methods I teach to organizations today are no more sophisticated then the Plexiglas board of 1977. In fact in some ways that method worked better then some of the software costing tens of thousands of dollars today. And that was 30 years ago! So sophistication of thought is not the change I am referring to.

Here is where the biggest change of the last 30 years and the biggest story is. In fact, the biggest story of the last 30 years happened in the last 5 years. The change is a simple word that has wide consequences. The word is access.

30 years ago the Western world meaning North America and Europe were the only ones with access to sophisticated technology (you could argue that Japan and Australia should be included and I would not disagree). In fact, at that time the technology was available to only a microscopic subset of the employees of even the most sophisticated western companies. In the late 1970's and 1980's you would not see too much advanced technology in the hands of Canadian maintenance managers and certainly not their Jamaican maintenance manager counterparts. But now the tools are everywhere.

Why does this bother me? What's with the shivers I felt when I looked out at all those people with their laptops?

It struck me that we've been cheating. Not perhaps cheating but at least the deck has been stacked. All of a sudden the whole deck is being shuffled; really shuffled and new hands are being dealt. It has to do with one of the trade-offs that we've had for the last 30 or 40 years. The trade-off has been between low wages in the third world and high productivity via sophisticated tools in the first world.

Everyone agrees that Canada, the US and Europe cannot compete with China, Vietnam, or Africa in terms of wage rates. There has been an out until now. In the first world we pride ourselves on making up for that because we have traditionally higher productivity and quality due to our adoption of the best tools of the time. Of course we have great people and a good work ethic. But my observation says that other countries have good people too. The work ethic in some Asian and other countries is way better then the west.

There is good news or at least offsetting news. The proliferation of technology to boost productivity has also happened in the Western world. Now our maintenance guys have the cool tools too. Maintenance has the Internet for research, laptops with wireless and tricked out cell phones just like the sales force or the production floor.

I think the problem is that since we have been working with the tools for longer we will get fewer gains from this most recent shot of technology change. The hope is that as we

harness the intelligence, drive and ingenuity of non-traditional groups like maintenance we will be opening up a new untapped resource. Maintenance may save the day!

What do you think is going to happen when billions of people with universal access to the latest technology working for millions of companies start to compete with the West?

Remember people have not changed too much. All they want is something better for themselves and their families. Companies have not changed much either they want profit and growth. Kind of sends a chill down your spine doesn't it?

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