



Are We Ready for the New Manufacturing Workforce?

Transcript from Webcast

Just as business is picking up, we are facing an aging workforce and are having trouble recruiting skilled new employees.

- Are we ready for the new workforce?
- Can we improve employee retention?
- Can we reduce learning curves?

The new workforce is computer savvy and are used to fast-paced graphic intensive video game interaction. Are we running the shop with 10-20 year old procedures? Or leveraging the latest media rich and 3D graphical tools?

The new workforce is also more flexible, mobile and distributed. Are we ready to support a build anywhere paradigm? Are we ready to provide: modern tools, flexible work arrangements (e.g. variant shifts, job sharing), and work-life balance options?

The new workforce is a mix of senior and junior personnel. How do we leverage our senior expertise? How do we improve on-the-job training? How can we effectively measure productivity to validate our training efforts?

iBASEt, KABA Workforce Solutions, and Managing Automation joined in this panel to discuss how leading manufacturing companies are leveraging new technology in Workforce Management and Manufacturing Execution (MES) to facilitate initiatives to attract, leverage and retain the new workforce.

Speakers



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Contents

1. Introduction – The New Workforce	p. 2
2. Attracting the New Workforce	p. 6
3. Tools for the New Workforce	p. 10
4. Training the New Workforce	p. 14
5. Summary	p. 16
6. Q&A	p. 17

Are We Ready For the New Manufacturing Workforce?

Managing Automation Webcast



Stephanie Neil

ma Managing Automation
LIVE WEBCAST
August 28, 2007

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Stephanie Neil
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Jim King
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Conrad Leiva
VP of Product Marketing, iBASEt

ma Managing Automation **KABA** **iBASEt** :02

Good afternoon, everyone. My name is Stephanie Neil, Senior Editor of Managing Automation Magazine and I'd like to welcome you to our web cast. Our topic today is the new manufacturing workforce. Over the last few years, the buzz has been around the fact that a large portion of the workforce will soon be retiring and with their departure goes some critical intellectual property. Today we're taking a look at the flip side, the next generation of workers who are

entering the business and manufacturing scene.

Today I'm joined by two industry experts who will explore what changes need to be made internally in order to manage the new workforce which is a very different generation from the baby boomers who preceded them. Joining me today is Jim King, Director of Product Strategy at KABA Workforce Solutions, and Conrad Leiva, Vice President of Product Marketing at iBASEt. I'll give everyone a little more information on Jim and Conrad's backgrounds and why they're here today a little later in the web cast.

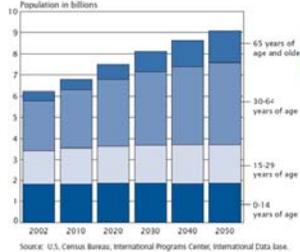
As I mentioned earlier, I am Stephanie Neil. I've been here for seven years at Managing Automation Magazine, which is part of Thomas Publishing Company and is distributed in print as well as online. Our mission is to provide readers with the information and tools necessary to accelerate the global transformation of manufacturing through the use of progressive technology. We update our audience regularly with daily news posted on our site, a number of product directories to help you find the right solution for your business, as well as through white papers and web casts. We are live today, but this web cast will be available on demand in the near future so please visit managingautomation.com whenever you get a chance.



Stephanie Neil

As America Ages, So Does the U.S. Workforce

U.S. Population by Age Group
 2000-2050



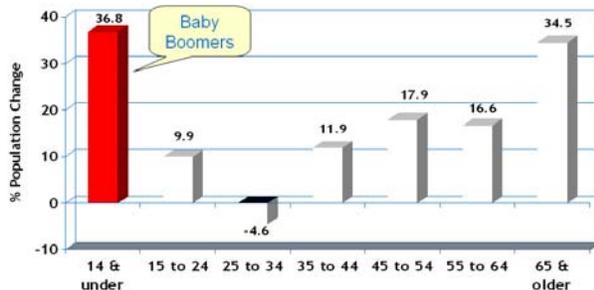
- Boomers comprise 46% of today's U.S. workforce
- 78 million Baby Boomers (born 1946-1964)
- As more retire, the workforce age mix changes

Source: U.S. Census Bureau, Bureau of Labor Statistics



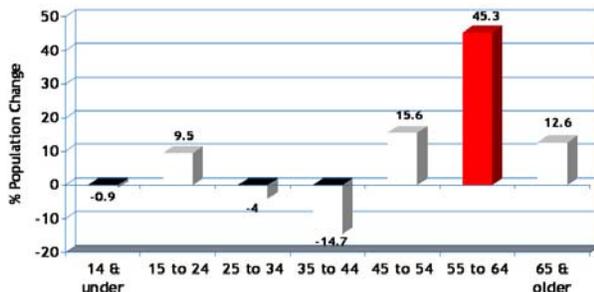
As America Ages, So Does the U.S. Workforce

Percent Change in U.S. Population by Age Group
 1950-1960



As America Ages, So Does the U.S. Workforce

Percent Change in U.S. Population by Age Group
 2000-2010



Moving on to slide two, I'll give you a little background on the issue at hand. This graphic is a snapshot of the working landscape. Today's baby boomers, those people born between 1946 and 1964, make up almost half of the current workforce. On top of that, they are starting to retire at increasing rates.

These next slides reinforce the fact that a large population will be exiting the workforce by the year 2020. This slide shows the sequence of how baby boomers are moving through the workforce. This information compiled by the U.S. Census Bureau and Bureau of Labor Statistics shows that a large portion of the population is currently in their 50s and early 60s.

To provide a little more color on the situation, I want to share with you a statistic we got from ARC Advisory Group which states by the year 2030, about 70 million people will be retiring. However, the influx will not balance that out. There will only be about 40 million people coming into the workforce. For manufacturers this means they will need to be a bit more creative about how they attract people, how they retain people, how they train people, and how they equip them with technology.

According to a recent report from Deloitte, this younger next generation called Generation Y strives for a work/life balance, desires open communication, wants to learn, wants a mentor, and they crave technology. After all, these individuals are people who grew up with the Internet and playing computer games. They are technology savvy which is empowering for them as they can be more productive as well.



Stephanie Neil



Here's a perfect example of how some companies are getting creative in recruiting Generation Y. This is an advertisement Boeing displayed in an airport in California. You can see from the tag line, "When did you discover your future?", that it's painting a the kind of things this younger generation needs to keep them interested. Human Resources departments understand the need to capture the attention of this up and coming generation. That's great to

get them in the door, but what can be done on the factory floor to keep the attention of Generation Y?

That's what we're going to talk about today. Representatives from KABA and iBASEt are with us today to explain the situation. They have experiences in this area as both companies provide technology that can modernize the shop floor by replacing old time clocks or paper based approaches to workflow and worker management with an online streamlined approach.

Panelists

	AutoTime <ul style="list-style-type: none">• Workforce Management software solutions <p>Jim King Director of Product Strategy</p>
	SOLUMINA <ul style="list-style-type: none">• Manufacturing Process Management software solutions <p>Conrad Leiva VP of Product Marketing</p>

ma Managing Automation KABA iBASEt :09.5 p6

KABA is a provider of workforce management software solutions, its flagship product being AutoTime. Jim King with us today on this web cast is the Director of Product Strategy at KABA where he worked for 14 years in a variety of roles. In his current position, he's responsible for guiding the direction of all of KABA software products. Prior to joining KABA, Jim worked at Intel as a field application engineer and a strategic account specialist. He's also worked as an engineer at

Lockheed Martin and Union Carbide.

Also with us today is Conrad Leiva, Vice President of Product Marketing at iBASEt. iBASEt provides manufacturing process management solutions through its product, Solumina. Conrad started his career in Aerospace and Defense at McDonnell Douglas.

For the last 12 years, he's been with iBASEt working on reengineering procedures for the paperless shop floor together with companies that include Boeing, General Dynamics, Pratt & Whitney, Sikorsky and Gulfstream to name a few. As Vice President of Marketing, Conrad works with end users as well as partner software companies, optimizing information flow between Engineering, Quality Assurance, and Operations. Conrad, do you want to add anything at this time to explain why iBASEt and KABA are here together today speaking on this topic?



Conrad Leiva

Yes, Stephanie. KABA and iBASEt, we're both continuously working on new capabilities and improving integration of our systems for the plant floor. Both of us have recognized that we need to consider the implications of the new workforce for our customers. That we need to enable productivity improvements and provide systems that will be attractive to the new workforce.

I'd like to make a quick sidebar before we get started. That recent study by Deloitte that you mentioned was published as part of the Deloitte 2007 HR Series. It pointed out a few interesting facts about the new workforce. And I will be referring to some of those points today. One of the areas that they surveyed was the top five things that the new workforce is looking for in a job. They included (1) a long term career development, (2) a sense of purpose, (3) availability of mentors, (4) work versus life flexibility, and (5) a technical savvy work environment. We did not organize the discussion today around these points, but we will end up touching on four of the top five motivators for our new workforce. Back to you, Stephanie.



Stephanie Neil

Okay, thanks, Conrad. Before we dig deeper into the topics, just a reminder that this web cast is meant to be interactive. I'll be asking Conrad and Jim questions throughout the broadcast, but you can, too. At any time during the presentation, you can submit a question by hitting the button on the left side of your screen labeled "ask a question" and just type in your question. At the end of the presentation, we'll be conducting a Q&A at which time we'll address the questions that come in.

Topic Outline

1. Attracting the New Workforce
2. Tools for The New Workforce
3. Training The New Workforce

   :10 p7

Here's a topic outline. First, we're going to address how to attract Generation Y. Second, we're going to look at the tools that are needed to keep their attention. And lastly, how you train and retain them.

So let's kick off the conversation with how to attract the new workforce. Jim King, I'm going to pass the baton to you and ask you, "What can manufacturers do as they compete for this talent?"



Jim King

1. Attracting The New Workforce



:10 p8

my father did and what he went through versus my daughter. My daughter is a recent graduate from Georgia Tech and has just entered the workforce. My father was a WWII veteran and so they are obviously coming from very, very different views.

Employee Attraction and Retention

- Employees will expect / demand more flexible working arrangements (Life / Work Balance)
- If you can book flight reservations, check on your bank account, and track the progress of a shipment from home, why would you not expect powerful, flexible tools at work?



:12.5 p9

he'd have to work midnights, off for two days, and then do it all over again. And it really was a demanding toll on him. You never could get your cicadae rhythm right; you were always kind of out of synch with life. And it really did not consider the impact that it was having on the employees.

Thinking about my daughter, if she ever got an offer like that, it would take her probably several hours to quit laughing at it because young people today simply would not accept something like that. We've got a generation today that whether you want to call them pampered or spoiled or full of opportunity, they're admittedly very different than the generation before.

This is a generation that spends a huge amount of their time on either MySpace or Facebook. They're used to being able to instantly go to their online website and chat with their friends. They're able to immediately order something online and they're shocked if it takes more than one day to arrive at their doorstep. They can check their bank balances

Thank you, Stephanie, I appreciate that. Conrad and I have worked together for quite some time in this arena with our different companies, we've seen the same problem and I've tried to put it into a perspective for this presentation that I hope will make sense to people. And hopefully something that will match up with their experiences. But as I think about the differences that we see in the workforce today, I think to my personal life and think about what

The work schedule that my father went through is something that quite honestly I can't imagine any of the young people today would be accepting. There's too many job offers out there, there's too many other places for them to work. But the things that, in my father's own experience, he literally worked a rotating shift where he would start a day shift and then get off two days and then he would have to work evenings and then get off two days, and then

24x7. They can get on a website and book airline reservations. All of these things that we now take for granted with the evolution of the Internet, with the tools that retail services are making, with the social networking that's available, it's an entirely different world than folks like myself grew up in. And they frankly expect that. When you are talking about an environment for them to work, they are expecting that the area they go into will kind of match the rest of their environment that they've been used to.



Jim King

Ex. Workforce Scheduling Practices

- Matches production demand with employee availability, qualifications, skills, and scheduling regulations
- Fairly manages the processes for overtime offers, distributing and converting comp time, managing complex schedule/job bidding and maintaining leave balances



Let me give you an example of one of the demands... I told you about the scheduling differences of what my father's and my daughter's generation would look at. The work/life balance that people talk about is a big topic for everybody. It's not just that you are going to make a living, but you want to enjoy doing what you're doing. In the past, it wasn't maybe such an option because there were a lot more people than there were jobs for. We didn't have all the opportunities that we

have now and we certainly didn't have a communication network. I think in the previous generation, folks weren't as mobile, they weren't as willing to change. And then once they got into a spot, they were willing to stay there for a long time. Now, you've got to work to keep and retain those employees. You've got to consider the life/work balance.

One of the tools that we've seen that people are using for that is a workforce scheduling tool that will take into account not just the production demand, but also the requests or the requirements of your employees. More and more you're seeing that people are taking into account multiple shift workers. An interesting statistic that we found in our own customer base is that for those people who are on shift work, what we traditionally call the odd shifts, more than 60% of those people have multiple family members that are likewise on shift work.

What that means is that in certain cases, let's say that you have a married couple that have no children. And in my case, they would live in Alabama and they work in Georgia, and I've seen that quite a bit. They would drive all the way across and they always, always want to work together. They want to carpool together, they want to do that commute together. They don't want to be split apart on a shift. Whereas others may have children and it's critical to them that one of them be at home at all times. So you're going to have to put into the system the requirement that these two individuals would never be assigned to the same two shifts and also that the shift start times would have enough separation to make sure that somebody was always at home.

So those are the kind of demands that we're seeing. And you really need to have advanced systems that can help you track all of that. In addition to that, of course you've got to keep up with qualifications, you've got to make sure that the employees are properly trained, that they're certified that they meet all of the legal certifications that are

necessary, and simply that they have the proper skills to accomplish the job.

Then on top of all that, you've got to be able to treat all the employees on a fair and equitable basis. It's no longer acceptable to always give the overtime to the manager's favorite employee. It's not acceptable that the least favorite always gets assigned the Sunday midnight shift. People now know what's going on. They're not living in a vacuum. So you've got to be able to fairly compensate people and treat them equally and fairly. And that's an important component of this.

Some of these things we have seen that employers are offering more and they are great for flexibility, but it puts a huge demand on the employer, because they still have customer demands that have to be met. We still have production schedules; we still have requirements that are expected from us to stay in business. And yet, we've got to learn to be flexible on the backside so that our employees will want to stay with us. And that's the big challenge.



Flexible Arrangements

- Flexible working arrangements
 - 9 / 80 schedules
 - Job swap boards
 - Scheduling based on employee preferences as well as skills
 - Job sharing
 - Easy time off approval and review
- Must meet requirements of FMLA and still get the job done



Some of the things that we see that are coming out from our customers is a thing called a 9/80 schedule. A 9/80 schedule is I think a quite innovative booking of time. In essence, it's nine days that you work during a two week period. You cover the full 80 hours during that nine day period, but you're allowing them to have a three day weekend every other weekend. So you work five days of 9 hours, then you work the following week 4 days, the last one only being 8 hours and then you

get a three day weekend every other weekend. That's a very nice benefit. And a lot of employees are positively impacted by that.

A job swap board is another nice idea that we've seen come up where people will want to take a particular day off. They may not have vacation, but they know that they've got, based on their shift pattern, a day off coming up and they'd like to take this day off. You allow them to post that offer onto a job swap board and you make that available to people who are number one, qualified, certified to do the job, and not otherwise engaged. It makes no sense to offer it to everybody if they're not qualified or if they're already working. So this is an automated way to put the offers out there. Only the qualified folks can see them, they can respond, accept, and at that point the employee has received what they want. The company still has the production help that it needs and things are much better.

Scheduling based on employee preferences is another trend that we've seen a lot of. And this is where I gave an example earlier about the desire to always work with a spouse or not work with a spouse, but we know human beings, we all have certain preferences, there's certain people that we team with very, very well and others we'd just as soon not

be a team member with. And we've seen scheduling systems and needs that will support this sort of thing.

Job sharing is a new concept that is becoming more popular even in the manufacturing space. There're two people who want to work part-time, but you need a full-time position. You set up a mechanism and allow those two individuals, or three individuals depending on the situation, to actually work together and fulfill the need for that job. It gives them a lot of flexibility, it improves the quality of their life, and yet it still meets the manufacturer's demands.

And another thing I'll show an example of later is an easy time-off approval and review. A lot of people complain about how long it takes to get their vacation approved. They can't take vacation when they want it and automating that process is a big improvement. And finally, one of the biggest bugaboos of all, why we see more people using automated systems, is the Family Medical Leave Act. There're a lot of both state and federal regulations that are placed upon manufacturers. You've got to offer this to your employees and yet you've still got to get the job done. So it's a huge balance and it's a massive task that the manufacturers face today keeping the employees satisfied and retained but yet it's mandated that they must do it. Conrad, have you got some other examples you'd like to add?



Conrad Leiva



Yes, Jim. First, manufacturing in general lacks the appeal for today's youth. It's perceived to be a dirty and dangerous occupation that requires more brawn than brains. And we confirm this perception every time we go into a plant and see tables full of piles of binders, full of paperwork with handwritten notes, and covered with grease stains. For example, in aerospace and defense, we talk a lot about our leading edge products, but we do not talk much about our leading edge plant floors and

practices.

I don't believe that the new workforce will be impressed by 20 to 40 year old procedures that are based on filling out forms and routing them through the factory and office. The "new workforce", also called the "gaming generation", are Generation X and Generation Y youth that grew up using computers. They used it as kids and they're used to playing very sophisticated computer games.

They might have a short attention span and little patience, but the good news is that this generation is also very tech savvy, it's more flexible, they're fast learners, and they're better team players. So we can gain a lot by embracing this generation and their new qualities and embracing them with new practices.

There is a huge opportunity for manufacturers to show the next generation that there is a challenging future for them in manufacturing—a future involving marketable skills with computers and high tech equipment. The new workforce is looking forward to these new procedures and newer systems and newer technologies. Do we want to show them blueprints and shelves of binders with paper procedures?



Conrad Leiva



Or do we want to show them animated work instruction based on 3D CAD models? Do we want to show them paper forms that need to be filled out and stapled together and pushed around the plant floor or a modern manufacturing system that gives them a complete view of work in process, online, and real time? Where would you rather work?

If employees are presented with both of these options while shopping for a new job, which one do you think they're going to choose? They will choose the company that will give them experience with the latest tools. Stephanie...



Stephanie Neil



Thanks, Conrad. So we talked a little bit about the next generation not wanting to, or not standing for this antiquated paper approach. And you both implied that we need new tools for the new workforce. So Jim, can you elaborate on that point for us a little bit more?



Yes, I'd be glad to. Here we've got a little pictorial showing the old way and the new way. And I think most of us on this call will have experienced a little bit of both of those. On the left, are old fashioned time clocks. You insert your card, it could be a magnetic striped badge like the one showing on the bottom, or it could be, literally, still a paper timecard. We do see those quite a bit still. Bringing a new Generation Y user up to one of those, they're going to feel more like they've come into a museum than into a manufacturer and a place they're going to want to work.

On the right we've got some examples of some more modern technology. If you can't tell from the pictures, the one in the middle, they're using biometrics to identify themselves. We are losing the badge, getting rid of that and using a more modern, more secure way of accessing data. At the bottom you see the lady is using a touch-screen, a large touch-screen industrial-type computer. On the screen, detailed work instructions and even a graphical display of the subassembly that they need to be working on. And then on the upper right corner you see a gentleman using detailed work instructions again. But they're using all of these, not on the paper forms, but on automated computerized forms.



I gave an example earlier of one of the things that is a fairly simple improvement that you can do for people, but it makes a big impact on the impression that it makes in the effectiveness of your overall environment. In the past, people were stuck with paper. They may be online, but still it's a Word document, that's either printed out, or e-mailed back and forth. There's no workflow automation to it. You simply have this form, you've got to fill it out with pen and paper or stick

it in an envelope or stick it in an e-mail or whatever. And it's such an old-fashioned way, ineffective way of doing it.

A more modern way, and you can see this to the right, is an employee simply goes to their kiosk which can be deployed in a break area or even on the shop floor terminal. It's the manufacturer's choice, but this sort of technology can actually be available right on their work station and they don't have to go into a break room, they don't have to pull away from their job at hand to go do this. It's a very simple form. They simply say I

would like to request vacation off from the 23rd through the 24th. It's a full day vacation. I can check my balances, I can find out for sure how much time that I have available and this is a simple little online way of speeding up the process and making it a lot more modern.



Conrad Leiva

Example: Data Collection -> As-Built Records

Paper Online

The slide compares two methods of data collection. On the left, under the heading 'Paper', there is a photograph of a worker in a red shirt looking at a large sheet of paper with many stamps and signatures. Below the photo is a close-up of a grid of stamps, each with a date and a signature. On the right, under the heading 'Online', there is a screenshot of a software interface. The interface shows a grid of data points, similar to the paper version, but it is digital and appears to be part of a larger system with various windows and buttons. The interface is clean and organized, contrasting with the cluttered paper version.

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The numbers show that the labor market is also shrinking. So not only do we have a younger workforce, we also have a smaller workforce. Therefore, we need to be not only competing in a seller's market for talented employees, but we must also become more productive. We have to do more with less people. We don't want to give you the impression that the new technology is only about attracting the new workforce. It's first about increasing productivity

by streamlining and integrating processes.

These more efficient processes, of course, are going to be more exciting and more attractive to anyone, especially to new employees. In this example, the stamps probably look familiar. However, in this example we show a before and after picture and we've been able, with a manufacturing execution system, to eliminate the step that we see on the left, the step of wading through tons of paper to verify that all the stamps have been correctly collected. Because the manufacturing execution system on the right is able to automatically verify who did what—who signed the appropriate operations. Have they all been signed and do you have the qualified certification to do so? All of that process has been automated—a process that was not a very exciting process—a highly clerical process.

We picked this simple example just to illustrate the point, but there are many, many more examples and testimonials about how an MES system can help improve productivity. An important point to remember is that productivity is not just about reducing costs anymore. We must do more with less people because it will continue to get harder to find good people. Jim...



Jim King

Enable the Mobile Workforce

- Remote and mobile workforce require similar capabilities as static employees
 - IVR (telephone) systems allow simple reporting of normal and exception activities
 - Handheld devices provide both online and offline functionality
 - All functionality available over the Internet



Thank you, Conrad. To give you a little insight here into another trend we're seeing for tools that are necessary to be successful in this marketplace. The reality is that we've got a more mobile workforce. We've got employees who routinely work away from the main facility. They may be at a remote facility that's relatively static. You see more and more people working in branch offices that are literally their home office. You see more and more people who are working in

shared office space. You see people who will set up a shop in a remote site because it's closer to a subcontractor and they need to have access there.

So the trend is a lot more mobility, a lot more remote set ups. The mobile worker, one who is almost a nomad that moves from site to site on a very frequent basis; they may be in a service position. And all of these people need access and need complete and full access to the work systems. One of the simplest ways, very effective, is a telephone or an interactive voice response IVR system. Virtually anywhere in the world that you go, you can get a telephone system. And these are becoming very common, very popular ways to interact. You can get work instructions, you can provide clocking information, you can check on accrual balances, you can request time-off, you can send notices that I'm going to arrive to work late because I have a car problem, etc. So that's a tool that we're seeing wide use of.

Handheld devices, both in online and offline mode, are being used extensively also. Both in the local area, and I'll give you an example that I've seen very frequently in an MRO, or maintenance, repair and overhaul facility, where everybody is on a base, everybody is on a plant, but they're moving about. They're inside of a ship, they're inside of an airplane, and they still need to get instructions, they still need to get work directions, they still need to be able to communicate back to the main system. So in an online environment, we see these tools being deployed to people who are remote, scattered to the four corners, and they're working in an offline mode. There may literally be no live network there, not even a telephone network, and they're collecting all the data in offline mode. As soon as you get within range of a network, it automatically connects and synchronizes, and there's no particular burden placed on the user.

And finally I will say that I think it's not a surprise to anybody that it's just absolutely mandatory now that anything that you could do back at the corporate office, you've got to be able to do over the Internet somewhere, anywhere in the world.

And it's not acceptable to tell somebody that they've got to come in to get a certain amount of work done, because they've got to be able to have it at their remote locations.



Stephanie Neil

3. Training The New Workforce



Okay, so we're going to jump into the next topic which we've talked a little bit about. You know, increasing productivity, having remote capabilities, and in some ways, this next generation is more advanced and productive than ever. And we need to challenge them, but how do we do that? So the next topic we're going to talk about is Training the New Workforce. And Conrad, I think that you're going to be talking a little bit about this.



Conrad Leiva

Leverage Seniority Knowledge



Yes, Stephanie, I'll be elaborating a little bit on training. Because we're expecting a shortage of trade skills, we can expect to need a better training program and expect to do a lot more on-the-job training. Induction and certification training programs, both need to be more comprehensive to make up for a shortage of trade school education and experience.

This will be an excellent way to leverage our most senior employees. Some of them will make great trainers for the next generation. Another way we can leverage our senior employees is through a good mentoring program. We could assign mentors to each new employee to get one-on-one training and guidance from the mentor. Mentors can advise, they can point out sources of information, and take an active part in recommending training for new employees.

I heard from one of our customers that they estimated that the average employee makes \$250,000 worth of mistakes during their first year of on-the-job training. Can we afford to spend that much on the next generation? \$250,000 for each employee? That's just one example. I'm sure you can come up with the numbers for your own company. But mentoring alone is not going to be enough because we will eventually not have enough senior mentors to go around.

We also need to capture the knowledge. Deloitte pointed out on their study that the new workforce prefers to learn hands-on in teams with peers and mentors and that they also prefer to learn using multimedia. So why not use illustrated work instructions? They will provide an excellent way to document best practices and tips for the next generation.



Conrad Leiva

Enhance Work Instructions

Paper Online, Illustrated, Animated

The image shows a side-by-side comparison of work instructions. On the left is a paper-based instruction sheet with dense text and small images. On the right is an online, illustrated, and animated version showing a 3D CAD model of a mechanical part with callouts and a video player interface. The bottom of the slide features logos for 'ma Managing Automation', 'KARA', and 'iBASE t' along with the text ':40 p21'.

In this example, I'm contrasting a paper based work instruction system, which was pretty good, embellished with photographs. But I'm contrasting that to an online system. An online system with illustrated work instructions that were made based on 3D models. You might think that it takes a CAD engineer to create these illustrations based on 3D models, but the truth is that with the software today, any process planner can put these illustrations

together without knowing the CAD software.

I've also seen an aerospace company that has effectively combined illustrative work instructions with a “gray-beard” program to capture the knowledge of the senior people. They have actually brought people back from retirement to capture their knowledge and create work instructions for the new generation.

And while I'm talking about illustrative work instructions, another point I want to make is that the Deloitte study also pointed out that the new workforce will be more diverse with 37% increase for Asians and 36% increase for Hispanics. The more illustrations and less text will also alleviate the need for higher English language skills and it will reduce mistakes.

Retain Trained Employees

The image shows a billboard on a truck in an urban setting. The billboard features a large image of a person in a military-style uniform and the text 'JOIN OUR RANKS!' and 'www.romulocorp.com'. The bottom of the slide features logos for 'ma Managing Automation', 'KARA', and 'iBASE t' along with the text ':41 p22'.

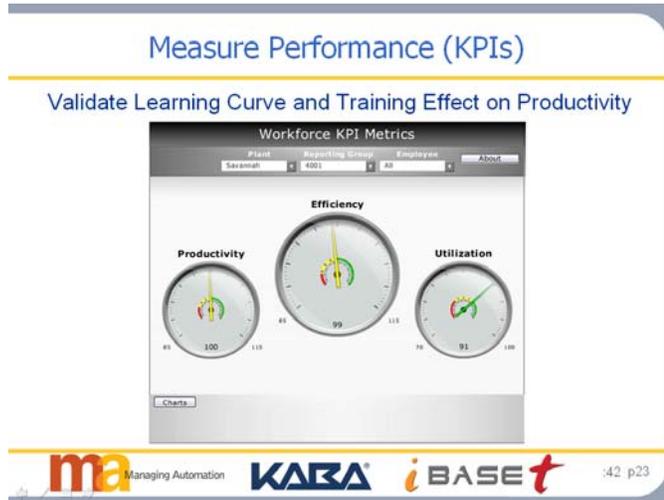
Induction, certification, and on-the-job training are all expected to cost a lot. So much, that employers are trying to steal people away from their competitors. They're resulting to tactics like the one in this picture where they're driving billboard advertisements right in front of their competitors during lunch hours and between shifts.

Perhaps you've seen some of these around your company. Perhaps we all need to consider these tactics in our own plants. But more important is to realize that

our employees, because of the high demand, will have more options than we ever had, that the new generation is planning to change jobs more frequently. We need to do much more than just advertising and raising salaries. If employees feel that they're being challenged, that they have a challenging work, and that they're learning valuable career skills, skills that make them more employable, they will be more likely to stay with their company and more likely to spread the good word. Jim...



Jim King



Thank you, Conrad. Well, to kind of wrap up the section on tools here, everybody I hope can see the value of improving the environment that the young workers are coming into, also improving the environment for the existing workers, making everybody more efficient, more effective, is a big part of this. But when you really get down to it, just feeling like you've done a good job is certainly not good enough. You've got to be able to

document it; you've got to be able to prove it. And more and more you see dashboard tools that come out like this. In this particular example we're showing one that shows the key performance indicators. And I think anybody in the manufacturing environment would be familiar with these three different key indicators through both productivity, efficiency, and utilization. And more and more we're seeing that as a requirement in all the modern tools. You can do all the training that you want, but unless it takes hold, unless your productivity and efficiency go up, you've really wasted your money on it. And so to measure that and to validate it, it's critical to have the backend that will give you these reports in a very effective and accurate manner. And with that, I think we transition to our summary, Stephanie.



Stephanie Neil



Yes, thank you, Jim. I want to encourage the audience to please ask some questions. We've got plenty of time to answer them, so whatever is on your mind regarding the new generation workforce, please let us know. In summary for the presentation, it was a great overview of the issues manufacturers as facing. And to quickly summarize, there's a couple of takeaways for our audience today.

We must embrace the new workforce because they're coming. And in doing so, we must modernize our practices. We must also establish best practices centered around flexible

work arrangements, integrated systems on the shop floor, and tapping into the expertise of the people who have been working for awhile who understand the manufacturing process inside and out. We can't forget that they're a valuable part of the overall solution.



Stephanie Neil

With that, I'd like to continue the discussion with some more interaction and some questions from the audience. So please, I encourage you to submit a question if you have not already. Just hit the button on the left side of your screen and type it in. And I am going to actually kick off the questions. We talked a lot about quality of life and Jim talked about the need for flexible arrangements. The job swapping, the 9/80 schedule, easy time-off approval. It seems like these are things that this new generation of workforce find valuable. But I'm wondering, do you feel that this gaming generation would value this work flexibility more over hourly wage or bonuses? Jim, do you have any thoughts on that?



Jim King

I'm not going to say that they value it more, but I think they value it equally. And again, it's a very personal thing. I mean some people the only thing that really matters is the bottom line. The dollar amount that they're going to be making. And others, it's just as important that they have a satisfaction in their life that goes beyond what that dollar amount is, that they have some flexibility that is -- you really can't put a dollar amount on it, but it brings them peace and joy in their life. And so that's an important part of it. I think about a lot of the employees that I've worked with over the years, and in particular here at KABA, a lot of the technical people that we have really thrive off of a flexible schedule. It's a trend that we see more in Europe, but it is coming here to the States more and more. I think many of us may work what we consider to be flexible hours, but it's really institutionalized in Europe into a standard called Flexi-time where there are the certain core hours that you must be at the facility, but at other times, you can come in as late as you want, you can stay as long as you want, you can go home as early as you want, as long as you meet the obligation of fulfilling your contract to supply the number of hours that's necessary, as long as you're there during the core hours which of course is when you schedule your team events, your meetings, etc. And ultimately that you get the job done. And we've seen this in manufacturing environments, not just among engineers and other professionals but in manufacturing where the work arrangement is oriented such that as long as you can get the job done, there's a lot more flexibility being offered. And we see that becoming more of a common thing here.



Stephanie Neil

So are you saying then manufacturers can't micromanage anymore, they really have to take a step back and reevaluate their management style?



Jim King

I think that's going to be critical to success into the future because as you look at the demographics that are facing us now versus where it's been over the past decades, Conrad said it well, is there's going to be more jobs than there are people to fill. And we're going to, if we're going to remain competitive as a manufacturer, we're going to have to find people that want to move into manufacturing. And if it's the same old same old without any new enticements, any new benefits to the people, you know, there's going to be other jobs that they will find that will be more appealing than a manufacturing space.



Stephanie Neil

You know, a question just came in that I feel is relevant to what you're saying. Today we already have a shortage of engineers because it's not viewed as cool. And so how do we make it cool, number one? And what's the effect of offshoring on the attractiveness of manufacturing? I don't know if Conrad or Jim, you want to weigh in on this?



Conrad Leiva

Sure, Stephanie, I'll say something. I think it does add to the concern. Obviously, even as apparent as we're looking at manufacturing as a prospective career for the next generation, we have to think about what is the assurance that I'm going to have a job in this area, that it's going to be a challenging job, that it's going to be a job with a long term career path. Offshoring is having an effect, but I think it is also a reflection of how companies feel about manufacturing. I think it's all part of a symptom of us not giving manufacturing the priority it needs. And I'm hoping that in the next few years we're going to see a comeback in that area. We're already seeing engineering turning around and a lot of programs to motivate engineers. I think we need to see the same kind of programs to motivate youth into manufacturing because we're making manufacturing more exciting, because we're modernizing the shop floor, and the parts on the shop floor so we're indicating to the youth that there is a long term future in manufacturing.



Jim King

I could add to that, Conrad, if you think about the message that we're delivering to the potential young manufacturing employees, if you show them that you're doing nothing, that you're basically just simply holding the line, you're really reinforcing the idea that well, eventually this is all going to be offshore, so don't worry about it. If you show an interest in making it better, if you show an investment -- I mean, they're going to pick up on these clues. They're going to see that, you know, these folks really are committed to the long term, they're going to be here. It would be a good place for me to work because it's going to be a long term opportunity. And that's demonstrated through the action of the manufacturers and the employers, not by their inaction, but by their action in embracing the future and making it a better place.



Conrad Leiva

I think we might as well add to that question... there's another related question on the queue and it is whether this is a global phenomena. I think it is -- one of the things the Deloitte study pointed out was that it is a global phenomenon. So it's not good enough to think, okay, we're going to make up for that difference looking outside and looking to import a workforce or export our manufacturing because this is happening globally. The deficit and the retirement rates are a worldwide global effect.



Jim King

I think you see it -- of course, Conrad, you and I are both based here in the States, but in Western Europe, it actually is a bigger problem today than it is here in the States. I think that it's a situation that occurs worldwide. Some places it's more pronounced than others, Western Europe being one, where of course you've probably heard that the birth -- not only the number of manufacturing opportunities dropping, people wanting to enter that, but the birth rates declining to the point where it's not even the replacement rate any more. And still yet the jobs needs to be done, so it's a big problem around the world, you're right.



Stephanie Neil

You know there's another question that came in about the trainability of Generation Y and you know, I talked a little bit about them being really computer savvy. We all talked about it, how them having this feeling of empowerment. The Deloitte study talked about that as well. So if this is a generation that's very independent and empowered, do we think that we can train them easily or are they pretty headstrong and have their own ideas of how things must be done? Or maybe, I guess the flip side of that is, we have to change our processes and become more electronic work instructions and more graphical and more animated in order to train them and keep their attention. Is that the route that we should be thinking? Conrad?



Conrad Leiva

One of the interesting things I've read is that because of the exposure to some of these very sophisticated games, the new generation actually learns to adapt very well into and is very quick to change. The same way that computer games are constantly changing and challenging them as kids, they've learned to adapt. A new service like MySpace comes on board very quickly, they learn it very quickly and they're using it. Now Second Life. All of these new things come up and you would think it would take a year for them to jump on. But in a matter of a week, there're millions of people on board adapting to these. I think there is a parallel there that the new generation is very flexible, very trainable, and that that is something that they're looking for. They're looking for a challenge and they're looking for jobs that will push them and they're looking for careers that will continuously challenge them.



Stephanie Neil

So this new workforce comes on board and we train them and they're challenged -- but isn't there a ripple effect here? I guess I want to talk a little bit more about the technology at hand. iBASEt products, the KABA products. At some point, everything has to sort of come together. So you have a more productive workforce that's a little more savvy in terms of computers. Therefore, the manufacturing floor needs to be modernized as well. Is there anything that, Jim and Conrad, you can talk about in terms of the relationship between iBASEt and the type of product that it is, and how that integrates with KABA and workforce management?



Jim King

Conrad, do you want to start and I'll finish it?



Conrad Leiva

Sure. One of the things -- if you look at an example of comparing traditional ways of doing business or more modern ways, one of the reasons that KABA and iBASEt have a close partnership is because of the desire for us to change some of the practices around clocking time, and the paradigm of having a labor clock on the wall that is separate from your work station. So that's a long practice that served us well for many years, but now we see that with more interactive systems on the shop floor if I'm already expecting someone to interact with a manufacturing execution system, to interact with work instructions and be filling out data online real-time... that labor collection for example, should be a side effect of that. That we need to integrate our systems so that some of these things happen transparently. That it doesn't take an extra step to go to a device and

say “now I’m clocking labor”. Since I have already, since I’m already online and the system knows what job I’m looking at, what job I’m performing, as soon as I read the barcode off of a product, the system knows where it’s at because it knows where I am, a lot of this automation today is doing that -- and a lot of this automation is what increases the productivity on the shop floor.



Jim King

Yeah, you framed it up very nicely, Conrad. It really is critical that you offer a homogenized, unified work environment for these employees. And again, not just the new employees you're trying to attract, but your current employees. You want to get as much productivity out of people as you can and I think we all get frustrated when we're forced to enter in data in one place and then we've got to go somewhere else to see it and then we go somewhere else to enter in virtually the same data, and then we go to yet another system to see it. This has to be a whole workflow work environment that is built together, made to work together. And the steps that Conrad was describing, it really is seamless to the employee. Instead of having to go to an extra step to record that I've just begun the work and that I'm now at a certain step in the work and I'm now finished with it, I'm going to lunch now or I'm going home for the day, you want it all to be in a single point. And why force somebody to say that I'm working on this particular job when your work instruction system just told you to work on that job? The very fact that the instructions were presented to you, you went through a work queue, you picked the right job to do, the high priority job, why have to ask the question again? It should be right there. You're displaying instructions for it, don't ask the question again. And then that tight integration between our two systems really does streamline that and makes it work - really it's a lot leaner environment when you're working in that fashion.



Stephanie Neil

So, Jim, do you think then -- I mean, does there also need to be a tight integration with Human Resources? I mean we showed earlier on that advertisement from Boeing. And we know that the HR groups are trying to attract this workforce. But at the same time, where do you start? It seems like we are in this turnover in terms of corporate culture to accommodate this next generation of the workforce. It seems like an overwhelming task, so where do you start? Are you guys suggesting that maybe you start with an automated workforce management application? Or you start by tying together certain procedures and it's just automatically going to evolve? Jim...



Jim King

Sure. Well from my experience and observation, again, this isn't necessarily a study that has been done, but I do spend a lot of time with people both in the manufacturing arena and the HR representatives there. To be honest, I think the HR representatives have recognized this trend for quite some time and have been trying to beat the drum. They've been trying to get folks like myself who tend to be -- I'm an engineer, I'm involved in the manufacturing side and not as sensitive to it as our colleagues in HR have been and I think it's critical that we make a step at this point. We've been ourselves reluctant to change and if you just simply would sit back and look at what the biggest problem is, and the colleagues in HR can help you with this, are you not able to find the right people? Are you finding the right people and they're leaving within three months because they don't want to work for you? Are you finding people that could be the right people but they're not being trained, they're not being effective? They're simply not producing? Or Conrad's example of creating a quarter million dollars worth of mistakes in their first year. Find out what your problem is and address that one first. There's lot of problems

ahead but go pick the highest priority and go do something. This is the kind of thing that can be done in a stepwise fashion. It's not like you have to drop a massive system in and completely change everything all at once. But find what the biggest pain point is and go address that one. Find the systems that will help you do that. A workforce optimization management system like we're talking about today really isn't the end all answer all. It's just one of the steps along the way. Corporate culture has to be changed first and then these become enabling tools.



Stephanie Neil

So with that in mind, if we have a younger generation and we can't change everything all at once obviously, it's too mammoth of a project. You're doing it one step at a time and therefore you're going to still have antiquated processes in place. So is the younger generation open to adapt to the old practices? I mean how do we make that transition? Conrad, do you have any thoughts on that?



Conrad Leiva

I think the important thing there is that we're perceived to have a culture of progress that the new generation and the old generation... that our employees see that we're making progress, that we don't have a do-nothing attitude, and we're fine and we don't need to change our ways. But more of an attitude of a continuous improvement process that we're always looking for better ways to improve our processes.

I think it is important to reiterate what Jim said, that it's important that we're focused on improving the business processes. And then looking for technology that can help us do those things. But it doesn't hurt to go out there and educate yourselves on what other people are doing, what technologies are available, because that might spawn new ideas. And it's all about creating a culture of promoting new ideas and promoting a continuous improvement process.



Stephanie Neil

And we can't disregard that a large part of the manufacturing culture is the union. And there's a question that just came in I want to ask it before we run out of time. We have about three minutes left and it's a question for you, Jim. Do you see a difference between union versus non union environments regarding work practices and changing to this new high tech environment?



Jim King

In the past, we saw huge differences. And I've actually personally worked in both union and non-union shops and 25 years ago it was a night and day situation. And more and more you're starting to see that they're coming closer to each other. In the past the non-union shops actually were the hardest ones to implement because the manufacturers, the employers would tend to do anything in the world to keep the union out. And therefore, they were leaning on a little bit more inflexible working arrangements, leaning on more flexible pay arrangements. But now I think that the unions are recognizing that we are in this global market like it or not. They recognize that a lot of the jobs that they considered safe and secure throughout the ages are now gone. And they see the competitiveness of it and they are looking now for more and more flexibility.

So to answer the question, I see that there have been differences in the past, they're coming close to each other. I do see a lot of movement in union shops that are willing to look at embracing high technology, looking at embracing more flexibility, and frankly more responsibility for the worker. And in the past, often again just from my experience,

I felt that a lot of the union employees felt they worked for the union and not the company. And now they realize that the company's ultimate health is going to determine their career success. And they recognize that and they truly want to make the place a better place to work, they want to make the company better to improve and enhance their career opportunities.



Stephanie Neil

Any final thoughts before we run out of time on this subject or anything else?



Conrad Leiva

I think there are some great new thoughts out there. I think academia is also playing a role and interested in this and I think we're going to see more projects and more initiatives out there where industry is looking at how to improve manufacturing here in the U.S. and how to make it more competitive to offshoring the work. This is especially a concern in industries like Aerospace and Defense where we do not want some of our technology exported. So I'm hoping to see more of that in the next few years.



Stephanie Neil

Well, I think that we're out of time. I know that there're questions that have come in and we'll make sure that we answer everybody's question, we have it all here. But we have run out of time and therefore that concludes the web cast today, the live portion anyway. I'd like to thank Jim and Conrad for joining me today and providing a new perspective on what needs to be done to attract and maintain a vibrant workforce. We also appreciate the audience questions. And just as a reminder, this web cast will be archived and available on managingautomation.com. Thanks for joining us today. Have a great day. Good-bye.

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