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One On One – Douglas K Woods

Douglas K Woods is the President of the Association for Manufacturing Technology (AMT), which represents and promotes manufacturing technology in the US. The Association owns and manages IMTS (the International Manufacturing Technology Show), which will be held from 8-13 September in Chicago. By William Poole.

AMT: What can exhibitors and visitors expect from this year's IMTS?

Douglas K Woods: At this year's IMTS, visitors and exhibitors alike will experience the excitement and energy befitting a world-class event. Our Emerging Technology Center (ETC) will feature a live build of a 3D-printed electrical vehicle from Local Motors in partnership with the Oak Ridge National Laboratory. Additionally, the ETC will feature a display about the Institutes for Manufacturing Innovation, a regional hub system of public-private institutes that focus on developing and rapidly commercialising breakthrough technologies.

As AMT is also active in promoting workforce development to address growing skills gaps, IMTS will again feature the Smartforce Student Summit, which will attract thousands of students, educators and parents. We want to give students a first-hand look at advanced manufacturing technology and a good understanding about industry careers and the opportunities they offer. Students will sit in on keynote presentations, take part in hands-on exhibits, and meet young manufacturing professionals to get a first-hand account of what their careers are like.

For exhibitors, IMTS offers a sales opportunity unlike any other. It's a rare opportunity to get in front of more than 100,000 customers at the same time! There's no other show that comes close in North America, and nothing that carries the brand recognition of IMTS. Attendees come year after year because they know they'll see the latest technologies, catch up with industry contacts, and meet new contacts as well. With over 1900 exhibitors showing off the latest technologies, everyone who comes is guaranteed to walk away seeing or knowing something they didn't before their visit.

AMT: Tell us about the Association for Manufacturing Technology and its role.

DKW: The Association represents US-based manufacturing technology builders and distributors. Our members design, build, support and sell a broad array of technologies, from machining systems and tooling, to software and automated systems, to metrology and workholding. Our members create some of the world's most advanced technology for the shop floor.

AMT has managed and produced IMTS since the show's inception in 1927. We build the show from the ground up each time, and every department within AMT has a role. Our Exhibitions department manages all of the show operations, from designing floor plans to handling operational and logistical details, to finding appropriate vendors, partners and sponsors for our conference programs and other co-located events.

Our Communications team takes the lead in marketing and promotion. The Industry Engagement team works with hotel partners to house exhibitors and attendees, and co-ordinates space and logistics for on-site meetings.

Meanwhile, our Manufacturing Technology team provides input for things such as the ETC and other technology-focused aspects. Our MTInsight team has been developing and promoting the IMTS app for exhibitors, which allows exhibitors to find their best sales targets and build relationships with them before they even arrive in Chicago. Global Services helps with bringing in international VIPs and connecting them with AMT members. Smartforce Development produces the Smartforce Student Summit. Advocacy invites federal, state and local government officials and arranges visits and tours to drive home the importance of manufacturing to a growing economy and job market. Strategic Analytics handles post-show surveys and other attendee and exhibitor data. Further support comes from our Finance & HR and Membership teams. Truly, every person at AMT is somehow involved with the massive effort behind each edition of IMTS.

AMT: What projects is the organisation working on at the moment?

DKW: A lot of AMT's focus right now is around the use of big data and information. We think what's happening with digital technology and digital manufacturing is very important to the future of US manufacturing. One of the keys to unlocking big data is open standards, and AMT is the primary supporting organisation for MTConnect, an industry-wide interoperability standard that's open-source, free, and available to users around the world. MTConnect provides seamless communication between manufacturing devices and equipment, allowing for improved monitoring and collection of shop floor data. It can be used for monitoring things like spindle performance and energy usage on individual machines, as well as tool wear and vibrations during machining. It's invaluable in helping manufacturers determine if they are getting maximum efficiency and productivity from their operations.

To ensure our members were positioned to leverage data we created MTInsight, a manufacturing-specific business intelligence and analytics tool. AMT offers a free seat to its members, who are then offered apps on a subscription basis that will help them leverage the market data and information most relevant to enhancing their businesses. This can help them identify markets, potential customers, and business opportunities on the horizon. We have developers and a sales and marketing team devoted to building and promoting MTInsight to give users the best possible experience.

Internationally, we have a Global Services network to promote our members' expansion into new markets. This year we opened a new tech centre outside São Paulo (Brazil), joining other centres in China (Shanghai), India (Chennai), and Mexico (Monterrey). These tech centres act as an "incubator" for our members' entry into these markets, providing office and showroom space as well as service capabilities for their products. The tech centres are staffed by experts on their respective markets who can provide the guidance necessary for members to succeed.

We also provide networking opportunities through our four-yearly events – the MFG Meeting, the Automation In Manufacturing (AIM) Conference, the MTConnect-focused MC2 conference, and the Global Forecasting and Marketing Conference.

AMT: Tell us a little bit about your background and how you came to your current position.

DKW: I've been in this industry my entire life. My grandfather had a tool-and-die shop, and I served as an apprentice before moving into various engineering and management positions. I was fortunate to be asked to run an automation operation in Europe and gained in-depth knowledge of the industry from an international perspective. I came back to the US to run my own company focused on automation and flexible machining systems, and that's when I got involved with AMT. I was active in committees and on its board of directors from 2000-2008, and served as its chairman in 2005-2006 before the opportunity came up to take on the president's role, which I've been in since 2009.

AMT: What might an ordinary working day entail?

DKW: There are no ordinary days at AMT! We're involved in so many key technologies, products and services, and the US market is so dynamic, we have many areas of interest and focus. In addition, we spend a lot of time staying connected to our international locations and of course our members so we can be aware of their needs.

We're also engaged with

activities on Capitol Hill to ensure the industry's voice is heard in our nation's capital. I personally take part in many speaking opportunities to spread the word about innovations happening in manufacturing technology and the immense value the industry adds to the economy. All this helps raise awareness about AMT, our industry and what we stand for – creating a favourable environment for a strong US manufacturing industry.

AMT: US manufacturing has undergone something of a revival lately. What's been the main driver of that?

DKW: Multiple factors are converging right now to drive the US manufacturing resurgence. Energy costs are low due to increased exploration and mining, particularly in natural gas. Interest rates are also low, allowing for favourable financing terms in purchasing new equipment. Add to that the fact that US labour costs have remained stable compared to other "low-cost" markets, which have seen skyrocketing labour costs in recent times. And of course manufacturers want to be close to their customers; the US market certainly provides that! All this is driving domestic companies to reshore or onshore at an increasing rate, while foreign direct investment in manufacturing is at an all-time high.

Additionally, the US has long been known for its innovation culture and entrepreneurial spirit. We have one of the best education systems in the world, and have been fortunate to attract and retain some of the best and brightest. All this has helped propel US manufacturing, and from current forecasts it looks like it will continue doing so for the foreseeable future.

AMT: What can Australia's manufacturing industry learn from the experience in the US?

DKW: I'm not sure we're in the best position to be giving advice to Australia as we still have a number of areas where we need to improve ourselves, such as extremely high taxes, onerous regulations and restrictive export controls. But there are several aspects that are important to building a strong manufacturing economy that we could point out. First, it's essential to promote manufacturing's value to the local economy – a strong multiplier effect that goes beyond just jobs in factories. Those workers are going to buy homes in the area, become customers at local businesses, and support the local community through sales and property taxes. It's important that government and the general public become educated on why it's desirable to have a strong local manufacturing base.

It's also important to foster a good environment for innovation – having the right infrastructure and incentive system in place for creating new technologies, products and services. Businesses are drawn to innovation centres, and then the supply base comes along with it. This plants the seeds for entrepreneurship and an attractive market for business growth. All this leads to stronger innovation and a better ability to export new technologies.

AMT: What do you see as the biggest opportunities and challenges for global manufacturing over the next few years?

DKW: From an opportunity standpoint, we couldn't be more excited about big data and digital manufacturing. Moving into this digital realm is going to improve productivity and enhance capital utilisation in ways we've not yet even imagined. It's also going to have an immense impact on design, as designers and engineers will more quickly be able to understand how their designs will perform before they even create their first prototype. Even education and training for workers will change, as technology becomes more accessible but also develops at a more rapid pace – in effect, education will need to adapt to become as agile and flexible as the technology.

In terms of challenges, another reason why education will need to move quickly is to address the immense need for skilled workers. To maintain productivity, let alone improve it, companies need skilled workers to come online as quickly as possible. We also need to make sure we're getting people interested in manufacturing careers and creating a good image for the industry. Those careers have to be promoted to students, educators and parents.

We will also see challenges in striking a balance for global competitiveness. Naturally, every country is competing for global market share. It's ideal if we can strive for collaborative partnerships rather than antagonistic relationships. That means creating a level playing field in terms of IP protection, currency valuation and so on. Our industry will do well to create symbiotic relationships in the spirit of healthy competition.