CONGRESO DE MANTENIMIENTO & CONFIABILIDAD

MÉXICO

ORGANIZADO POR:

AMGA

Jeremy Wright
Director, Product Management
Advanced Technology Services

The Technical Skills Gap

Jeremy Wright

- A recognized expert and leader in the field of industrial machinery lubrication management and reliability
- A proven technical educator and consultant – leading the development of consulting programs and methodologies
- Lubrication and Reliability Program Designer for many of the world's top manufacturing facilities
- Active in numerous professional organizations, including standards organizations
- Widely published, award winning author of articles, technical papers, and editorials
- Responsible for the product planning, maturation, and execution throughout the product life-cycle, including gathering and prioritizing product and customer requirements, defining the product vision, and working closely with operations, sales, marketing, and finance to ensure revenue and customer satisfaction goals are met.

Agenda

- US Manufacturing Skills Gap & Impact on Latin America
- Latin America Skills Gap
- Drivers of the Skills Gap & Actions Taken
- Business Strategies
- Questions

- Takeaways
  - Understand the Gap
  - Understand it's Effects
  - Formulate Solutions for Better Future Positioning

Manufacturing Skills Gap in the US

- Manufacturing will need to fill 3.4M jobs over the next decade.
- Status Que means that 2M (60%) will go unfilled.

Size	Facilities	Average Unfilled Positions
100 - 250	39,231	21.05
250 - 500	9,813	45.12
500 - 1000	4,107	90.25
1,000 - 2,500	1,590	210.58
2,500 - 5,000	335	451.24
5,000+	145	902.47

Data Source: Manufactures' News, Inc.

Drivers of the Skills Gap

- Retiring Baby Boomers
- Increase in demand for product & services
- Increase of skilled positions required
- Attractiveness of the Industry
- Education System
- Access to Talent

Increase in Skilled Positions

- Manufacturers continue to increase the amount of technology in their plants to add flexibility and lower cost, which creates and even greater demand for technical talent.

- Automation is taking the place of the manual labor worker in many industries which increases the need for technical workers. The make up of the manufacturing worker is changing.

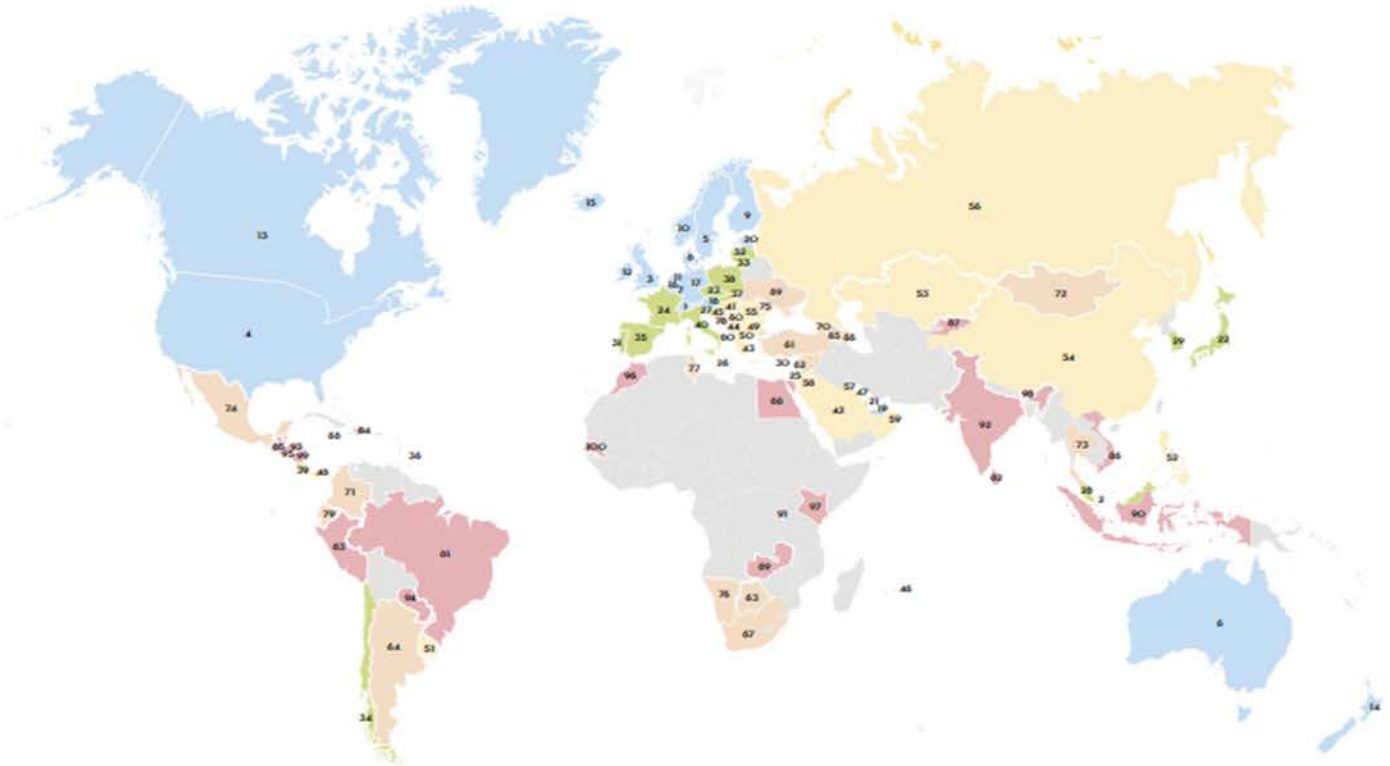
- Manufacturing is expected to have the strongest growth in spending the next 10 years, 5-6% annually reaching almost $120B by 2025

Manufacturing Skills Gap in Latin America

- 25% of Latin American Population Between 15 and 20. (34 Million)
- Challenge: transform this “human capital” to talent.
- Global Talent Competitiveness Index (Chile 34, Mexico 74)

THE GTCI RANKS COUNTRIES BY THEIR ABILITY TO GROW, ATTRACT AND RETAIN TALENT

GTCI 2017 TOP 100



1 SWITZERLAND	2 SINGAPORE	3 UNITED KINGDOM	4 USA	5 SWEDEN	6 AUSTRALIA	7 LUXEMBOURG	8 DENMARK	9 FINLAND	10 NORWAY
11 NETHERLANDS	12 IRELAND	13 CANADA	14 NEW ZEALAND	15 ICELAND	16 BELGIUM	17 GERMANY	18 AUSTRIA	19 U.A.E.	20 ESTONIA
21 QATAR	22 JAPAN	23 CZECH REPUBLIC	24 FRANCE	25 ISRAEL	26 MALTA	27 SLOVENIA	28 MALAYSIA	29 KOREA, REP.	30 CYPRUS
31 PORTUGAL	32 LATVIA	33 LITHUANIA	34 CHILE	35 SPAIN	36 BARBADOS	37 SLOVAKIA	38 POLAND	39 COSTA RICA	40 ITALY
41 HUNGARY	42 SAUDI ARABIA	43 GREECE	44 MONTENEGRO	45 CROATIA	46 MAURITIUS	47 BAHRAIN	48 PANAMA	49 BULGARIA	50 MACEDONIA, FYR
51 URUGUAY	52 PHILIPPINES	53 KAZAKHSTAN	54 CHINA	55 ROMANIA	56 RUSSIA	57 KUWAIT	58 JORDAN	59 OMAN	60 SERBIA
61 TURKEY	62 LEBANON	63 BOTSWANA	64 ARGENTINA	65 ARMENIA	66 AZERBAIJAN	67 SOUTH AFRICA	68 JAMAICA	69 UKRAINE	70 GEORGIA
71 COLOMBIA	72 MONGOLIA	73 THAILAND	74 MEXICO	75 MOLDOVA, REP.	76 NAMIBIA	77 TUNISIA	78 BOSNIA & HERZEGOVINA	79 ECUADOR	80 ALBANIA
81 BRAZIL	82 SRI LANKA	83 PERU	84 DOMINICAN REP.	85 GUATEMALA	86 VIETNAM	87 KYRGYZSTAN	88 EGYPT	89 ZAMBIA	90 INDONESIA
91 RWANDA	92 INDIA	93 HONDURAS	94 PARAGUAY	95 EL SALVADOR	96 MOROCCO	97 KENYA	98 BHUTAN	99 NICARAGUA	100 SENEGAL

Access to Talent

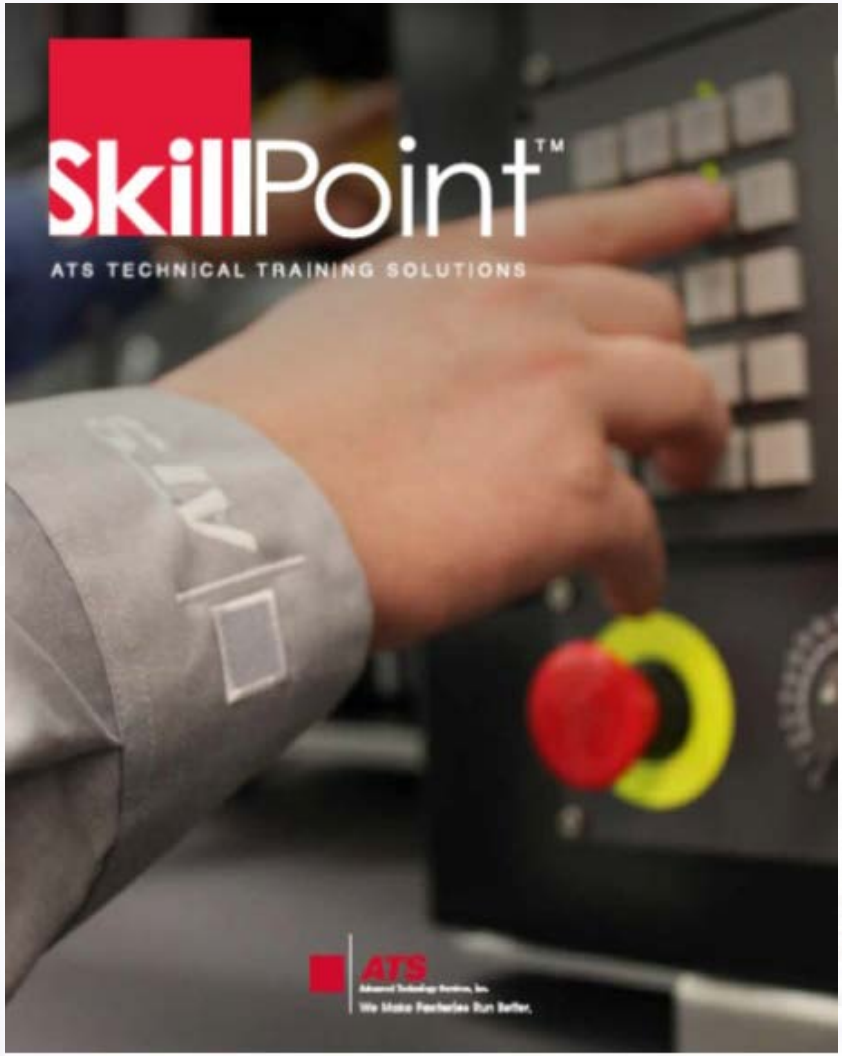
- Manufacturing companies normally recruit within 30 miles of the plant, limiting their ability to find the required talent.
- To cover for the lack of skills, manufacturers have increased the overtime worked and in some cases made it mandatory. Research states that on average work hours has increased 17%.
- This can add to the lack of attractiveness of the industry and cause the younger generation to look elsewhere
- All of these are adding up to the lack of technical talent in manufacturing. Hardest hit areas will be operators and technicians to handle the technology on the floor.

Innovative Sourcing

- Proactive pipelining of candidates for current and future opportunities using CRM technology
- Avoid outdated post and pray methodology
- Employ a headhunting strategy leveraging:
  - Social media outlets
  - Military channels
  - Technical school relationships
  - Traditional recruiting sources
  - Cold-calling techniques

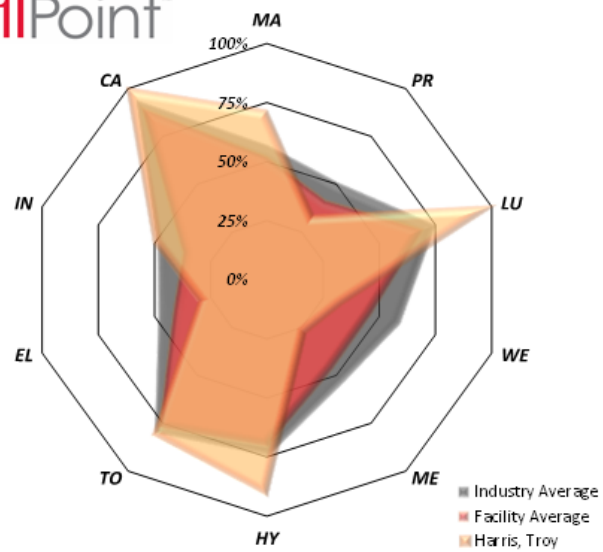
ATS Training

"ATS, Developing Talent Plant by Plant"



Sample Technician Assessment

SkillPoint™



Examinee:	Harris, Troy
Test Form:	ATS Mtc. Tech II/Sr. Mtc. Tech. - Form ATT
Date Tested:	12/17/2014
Test Location:	Therm-O-Disc; Mansfield, OH
Test Proctor:	Greg Padesky

	Category	Examinee	Facility Average	Industry Average*
MA	Mathematics	71%	52%	57%
PR	Print Reading and Schematics	33%	42%	51%
LU	Lubrication	100%	70%	75%
WE	Welding, Soldering and Cutting	33%	47%	59%
ME	Mechanical	28%	47%	54%
HY	Hydraulics and Pneumatics	92%	71%	75%
TO	Tools, Materials and Equipment	82%	78%	80%
EL	Electrical	30%	42%	48%
IN	Instrumentation and Control	50%	38%	49%
CA	Carpentry, Plumbing and Piping	100%	90%	94%

SkillPoint Observations

1.) Above average scores in Mathematics, Lubrication, and Tools, Materials and Equipment indicates strong potential for further growth in the core areas of mechanical and electrical. 2.) Opportunities in Electrical, Mechanical, and Print reading potentially indicate lack of formal training in industrial trades; but can be addressed through a blended learning model as indicated in further Development Actions. 3.) Strong focus on core electrical theory will dramatically improve systematic troubleshooting and print reading abilities. 4.) Strong Hydraulic and Pneumatics combined with Math and Lubrication will drive quick improvements in Mechanical tasks.

Recommended Individual Development Actions

ONLINE	HANDS-ON
EL100 - Electricity: Current, Voltage, Resistance	EL102 - Wiring Simplified
EL110 - Electrical Theory Fundamentals	EL122 - Electrical Troubleshooting – Relay Logic
EL120 - Electrical Logic and Motor Control Basics	PLC202-Allen Bradley–PLC 5, 500 & 5000 Platforms
EL125 - Electrical Prints and Schematics	ME127-Troubleshooting Mechanical Power Systems
ME120 - Mechanical Print Interpretation	RL158-Safe Rigging, Lifting, & Moving of Equipment

ATS Technical Help Desk

"ATS Technicians are never alone."

Intellicenter:

- Remote site technician assistance when repairing equipment via leveraging internal knowledge through a call center
- Central location for catalog of experts within ATS

Accessibility:

- Via phone call 1.800.855.210.2662
- Via iPad FaceTime icon

Preparation / Training:

- Remedy
- Safety Protocol
- eFactoryPro
- Emergency PO's

Education System

- Everyone must take an active role in changing the attitudes toward manufacturing. Some companies are working close with high schools and junior colleges.
- Start in house training & mentoring programs.

Business Strategies

- Center of Excellence
- Outsourcing noncore competencies

Center of Excellence

- The COE in our organization was established to define best practices and leverage across a wide geography.
- It is also there to have knowledge experts help develop training curriculum and participate in mentoring programs.
- ATS' COE is lead by a VP who reports to the CEO and provides audits and oversite to service delivery.

Retaining Retirees: Mentoring

- Many retirees may not want to work full time but many would like to work during certain periods during the year and many enjoy the opportunity to train the younger generation.
- Companies like Caterpillar and others have retained experienced personnel to bring along the next generation of worker. They make a little more money and get the satisfaction of being a mentor.
- They will however want to take their time to travel and enjoy some level of retirement. This might mean they are gone for a few of the winter months.

Outsourcing Non-core Functions

- Levels of complexity increase with technology. Many Companies outsource non-core competencies such as maintenance to companies that view the function as their core competency.

- Even non-core areas can have a level of complexity that will bog down your manufacturing leadership team.

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¡GRACIAS!

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Jeremy Wright

Director, Product Management

SI TIENES PREGUNTAS O COMENTARIOS…

¡No dudes en acercarte!