

The Process & Industrial Products series presents:

# Help Wanted—Addressing the Skills Gap in US Manufacturing

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# Agenda

- The widening skills gap
- Future outlook
- Recruitment challenges
- Closing the gap
- Question and answer

# The widening skills gap

# Poll question #1

Do you believe there is a skills shortage in the US manufacturing sector?

- Yes
- No
- Neither
- Don't know/not applicable

# Is US manufacturing prepared to meet the talent needs of 2015 and beyond?

- For years, manufacturers have reported a sizeable gap between the talent they need to keep growing their businesses and the talent they can actually find
- Beyond today's talent issues though, what do manufacturers need to address for future years? And, what is the trajectory of the skills gap over the next decade?
- Deloitte and The Manufacturing Institute embarked on their third Skills Gap study, seeking to answer these pressing questions

# Filling jobs is no easy task

The 2015 Manufacturing Institute and Deloitte Skills Gap study confirmed there is still a significant shortage of talent in US Manufacturing and is only projected to grow over the next decade. Executives surveyed indicate:



of executives surveyed agree **there is a talent shortage in US manufacturing** and they indicate...

**SIX** out of **TEN**

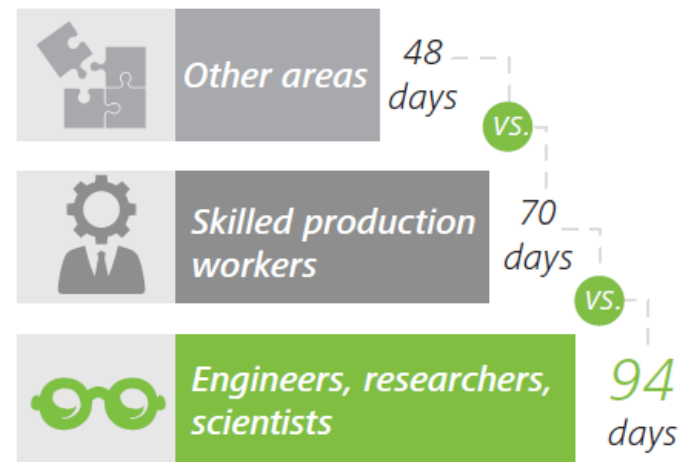
**open skilled production positions** are unfilled due to talent shortage



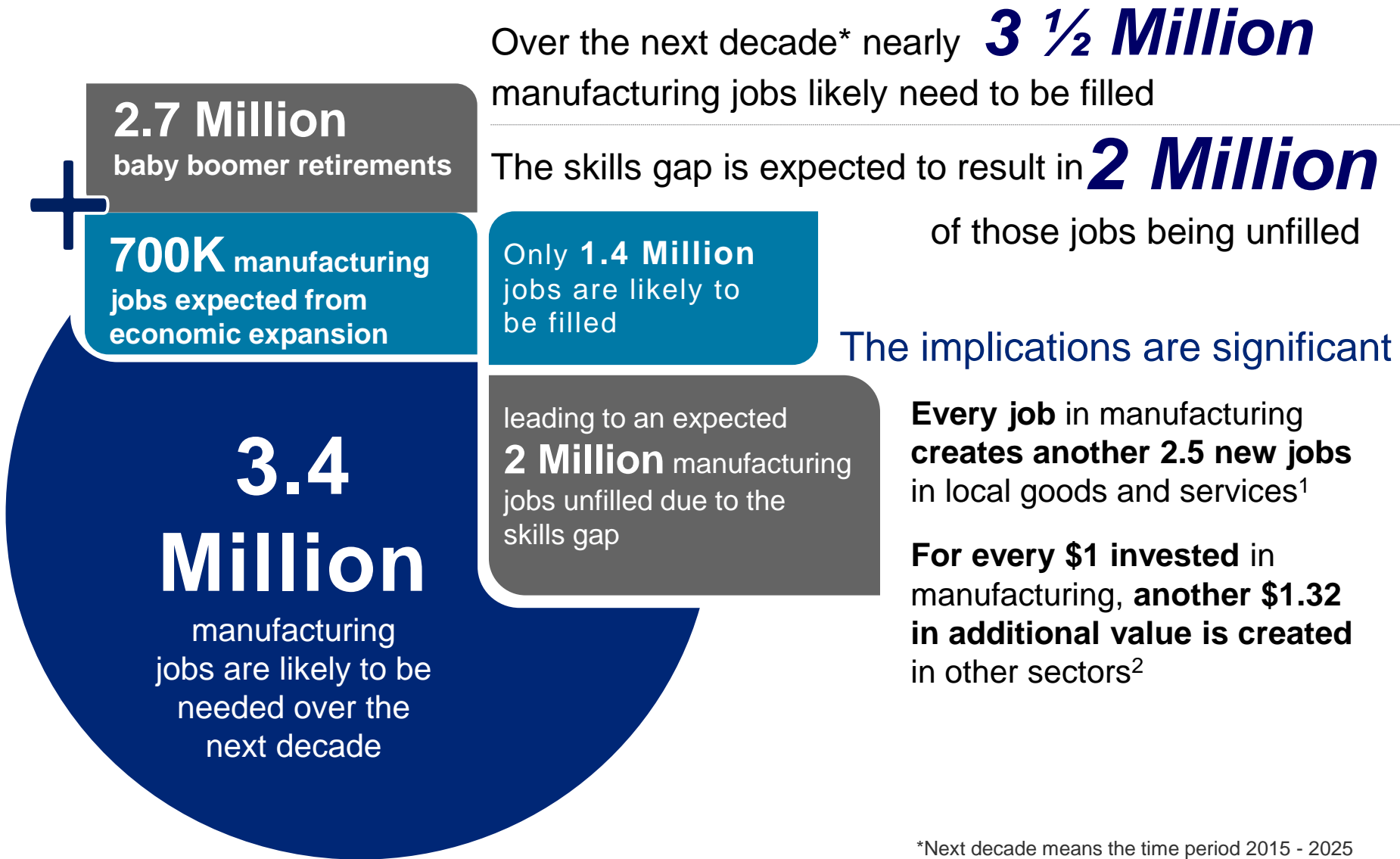
even when **80%** of manufacturing companies are **willing to pay more than the market rates** in workforce areas reeling under talent crisis



It takes **90+ days** to recruit highly skilled workers



# The skills gap is widening



Sources: Bureau of Labor Statistics (BLS) and Deloitte analysis  
1 Milken Institute and Economic Planning Institute.  
2 The US Department of Commerce, Bureau of Economic Analysis.

\*Next decade means the time period 2015 - 2025

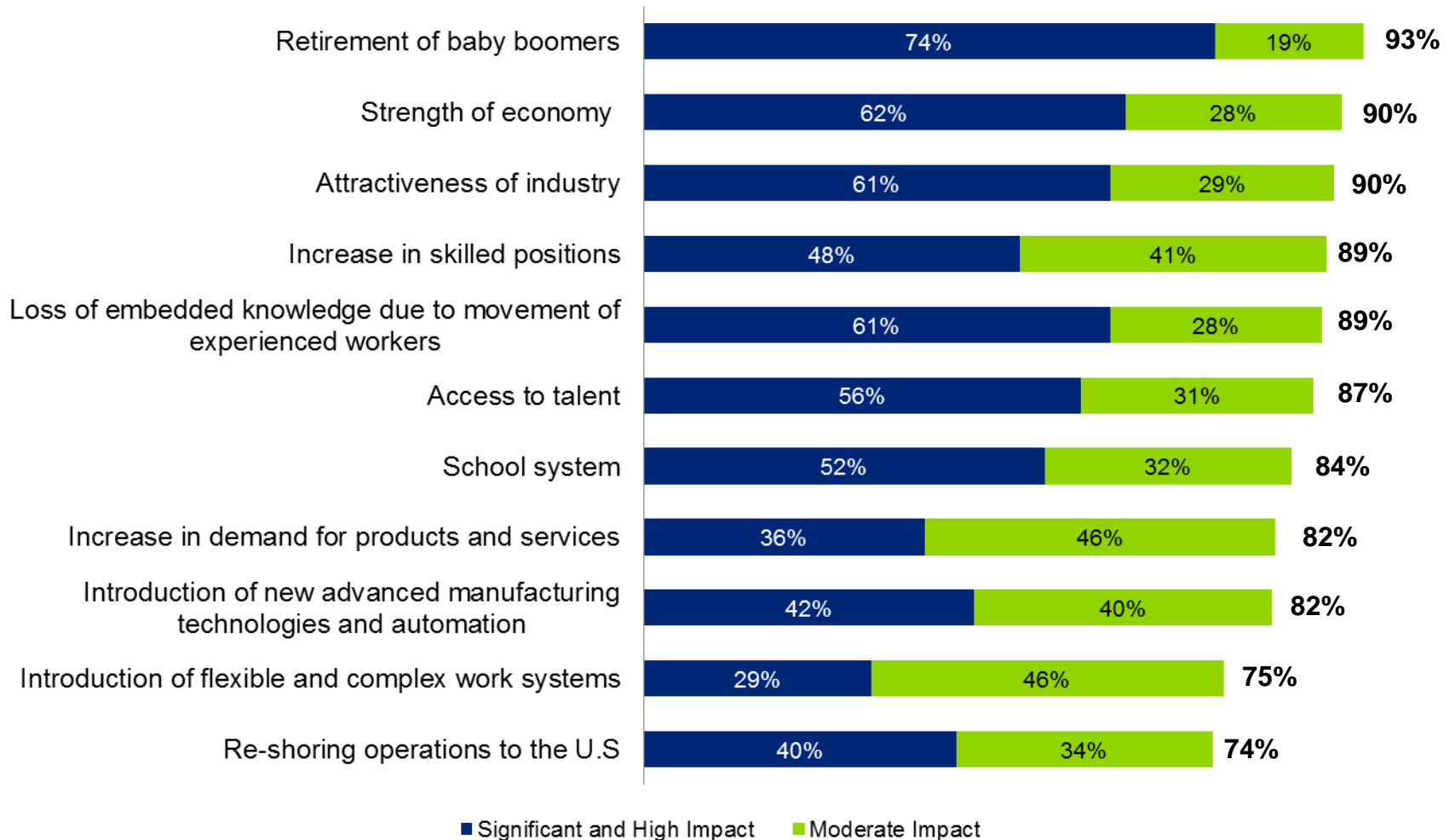
# The future outlook



# The changing workforce

## Factors contributing to the talent shortage

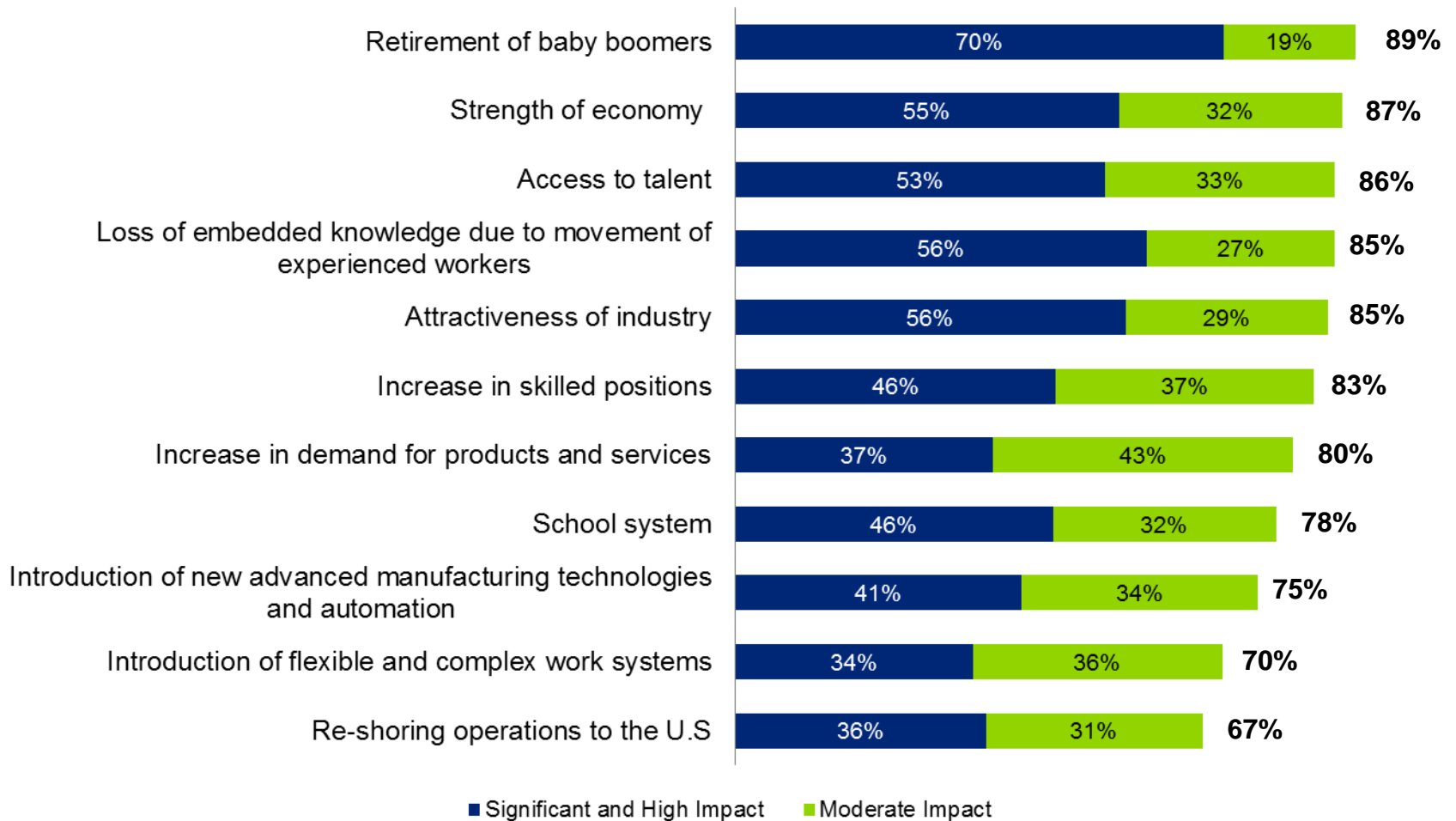
### Skilled Production Workers



# The changing workforce

## Factors contributing to the talent shortage

### Engineers, Researchers and Scientists



# The changing nature of work

Increasingly technical nature of manufacturing work and mismatch of skills

Percentage of surveyed executives that indicate current employees are **not sufficient** in key skills



70%  
technology/  
computer skills



67%  
basic technical  
training



69%  
problem  
solving skills



60%  
math skills

## Poll question #2

Which business area do you believe will be most affected due to talent shortage?

- Maintaining or increasing production levels with growing customer demand
- Implementing new technologies and achieving productivity targets
- Achieving customer service and post sales service
- New product development and innovation
- International expansion: ability to import, export or expand globally

# Talent shortage significantly impacts manufacturers

The Skill gap negatively influences operations, company growth and the bottom line in a variety of ways.

**82%** of executives believe the skills gap will impact their ability to meet customer demand

Executives also agree it will impact their ability to:



78% implement new technologies and increase productivity



69% provide effective customer service



62% innovate and develop new products



48% expand internationally

# Talent shortage significantly impacts manufacturers

## The economic impact\*

- Average US manufacturer is potentially losing 11 percent of its annual earnings (EBITDA) or \$3,000 per existing employee due to the talent shortage
- A loss of an average \$14,000 per open position that goes unfilled

Due to skills gap, an average manufacturing firm stands to lose...

11% of its annual earnings (EBITDA)

**OR**

\$4.6 million annually

**OR**

\$3,000 per non-management employee

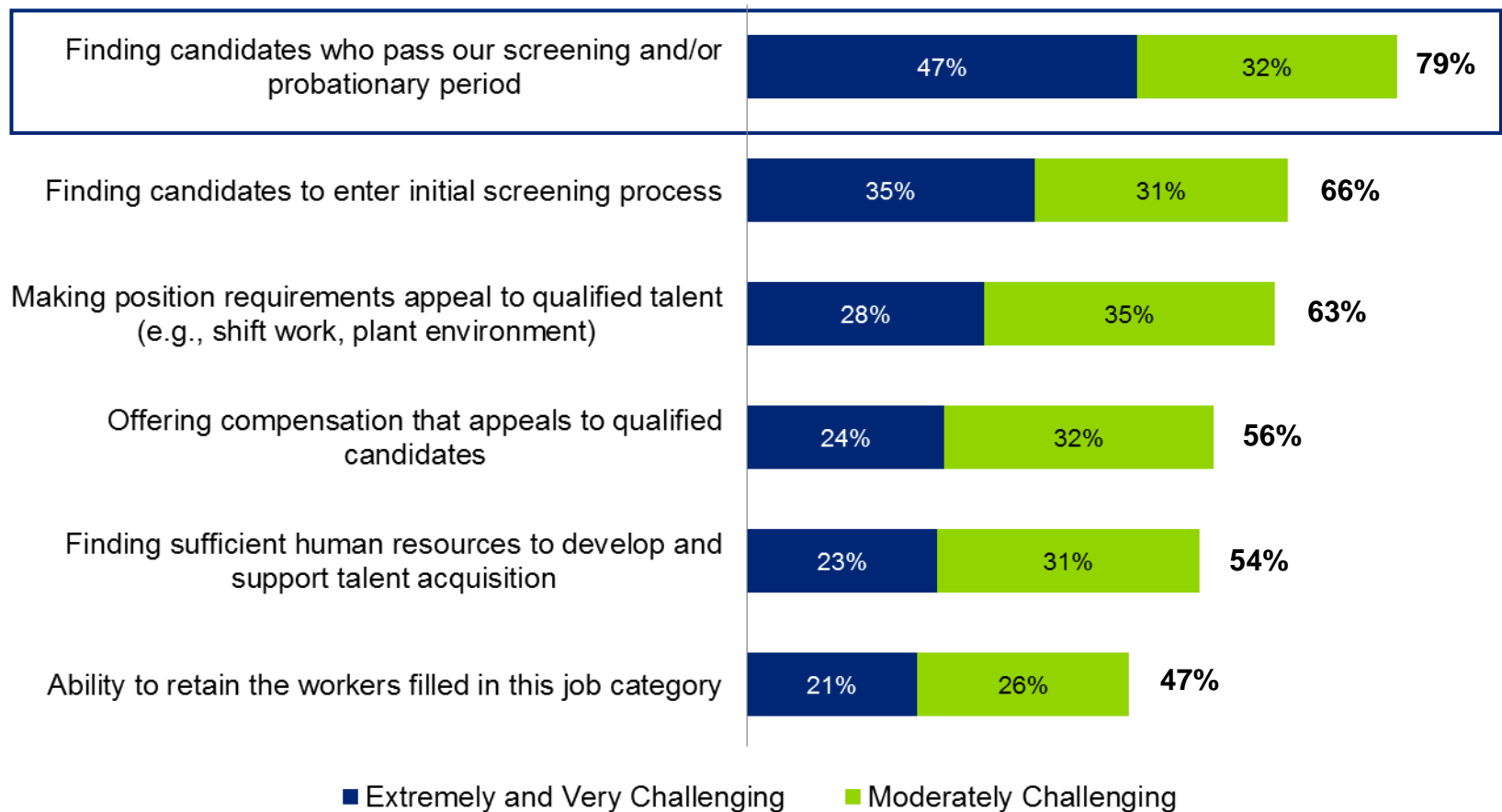
Source: 2014 Manufacturing Institute and Accenture Study

# Recruitment challenges

# Recruitment challenges

Difficulty finding the right candidates

## Skilled Production Workers



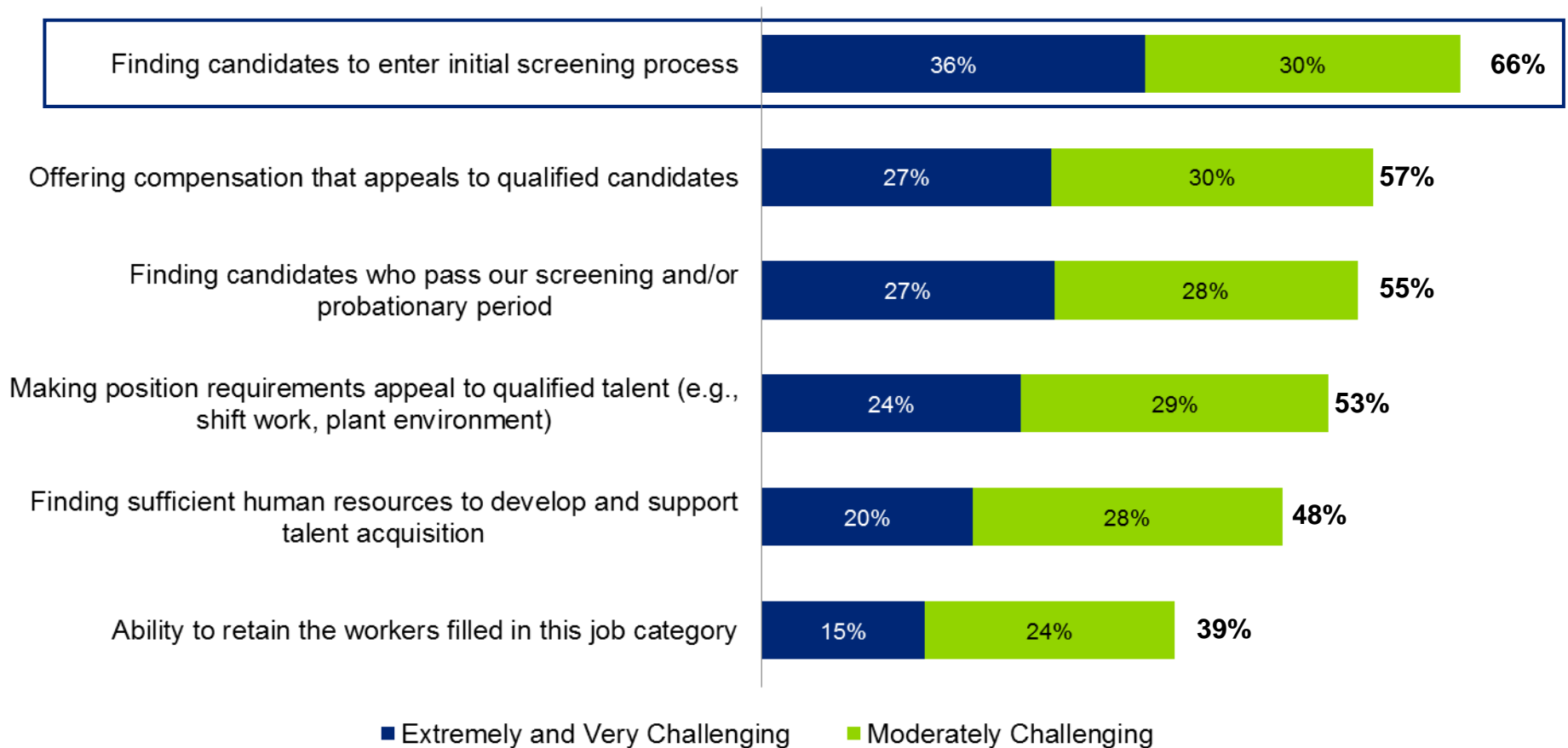
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# Recruitment challenges

Difficulty finding the right candidates

## Engineers, Researchers and Scientists



# Recruitment challenges

## Diminishing STEM talent in schools\*

- Student interest in pursuing a STEM career has been on the rise, yet...
- for 3 in 5 students graduating from high schools, this interest diminishes over their schooling years

## STEM Occupations

- STEM occupations, the job postings outnumbered the unemployed by almost 2 to 1 during 2009-2012\*\*
- Apprenticeship programs that combine on-the-job learning with mentorships and classroom education fell 40 percent in the US between 2003 and 2013\*\*\*

## If you pay more, will they come?

- Compensation and industry perception

### Sources:

\*Where are the STEM students, STEM Connector, 2013

\*\* STEM help wanted, changetheequation.org, 2012

\*\*\*Lauren Weber, Apprenticeships help close the skills gap, so why are they in decline?, Wall Street Journal, April 27, 2014

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# To reshore or not to reshore?

## Considerations for reshoring

- Financial incentives previously driving offshoring are diminishing
- Wage differential is rapidly decreasing between developed and developing countries
- Proximity between R&D and production functions greatly benefits manufacturing companies

## Challenges

- Hurdles in stabilizing the new workforce, addressing the organizational skills gap, localizing the supply chain, alternating the capital to labor ratio, and contemplating product design

**49% of executives surveyed** cite the following considerations for reshoring

### *Top Reasons for Reshoring*

Favorable logistics and supply chains in the U.S  
(90%)

Diminishing cost structure differential (87%)

Increase in domestic demand (80%)

Note: Percentage indicate the percentage of executives who opted for "Moderate influence" to "Extremely high influence"

# Perception issues

The 5th Manufacturing Institute and Deloitte Public Perception study confirms **Americans remain steadfast in their support of manufacturing** and also uncovers opportunities to strengthen interest, support, and engagement in the US manufacturing industry.

**90%** of Americans believe manufacturing is **very important to economic prosperity**

**82%** of Americans believe the US should **further invest in the manufacturing industry**

Americans believe the industry has **global competitive advantages**



<b>73%</b>	<b>72%</b>	<b>69%</b>
Technology use and availability	Research and development capabilities	Energy availability

US competitive advantages identified by respondents

Americans **support manufacturing job creation**

If given an opportunity to create 1,000 new jobs in their community, **manufacturing tops the list**

- # 1 Manufacturing Facility**
2. Technology development center
  3. Energy production facility
  4. Healthcare facility
  5. Retail center
  6. Communications hub
  7. Financial institution

# Perception issues

## Americans are reluctant to choose careers in manufacturing

While more than half of respondents believe manufacturing jobs are interesting and rewarding, negative perceptions toward manufacturing still exist and need to be addressed.

**1/2** Of Americans believe manufacturing jobs to be **interesting and rewarding**

**1/3** Agree that manufacturing jobs are increasingly **available and accessible**

**1/2** Believe a career in manufacturing provides a **good income** relative to other industries



*THREE out of FOUR*

Believe manufacturing jobs are the first to be moved to other countries

# Perception issues

Americans are reluctant to choose careers in manufacturing

Only **1** out of **3**

Parents would encourage their children to pursue a career in manufacturing

## WHY?

59% worried about job security and stability

45% believe the industry has limited career prospects

Reasons for not encouraging child or younger generation

53% believe school systems provide exposure to manufacturing skills




30% believe school systems encourage students to pursue manufacturing careers

# Perception issues

Americans agree action and investment is necessary to **drive manufacturing competitiveness**

 **82%** agree  
US **healthcare costs** need to  
**decrease**

 **80%** agree  
US needs a  
**comprehensive energy policy**

 **78%** agree  
US **education system** needs  
**reform**

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**82%**

**of Americans believe the US should further invest in the manufacturing industry**

# Perception issues

Americans indicate **targeted programs would increase interest in manufacturing careers**

**72%** Internships, work study or apprenticeship

**68%** Certification or degree programs for manufacturing skills training

**61%** On campus recruiting by manufacturing firms

**52%** Tours of advanced manufacturing facilities for students

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Industry familiarity **increases positive perception**

- Those familiar with manufacturing are **2X as likely** to **encourage a child to pursue manufacturing**
- **Ranked manufacturing 3<sup>rd</sup> as career choice** out of 7 key industries versus 5th overall



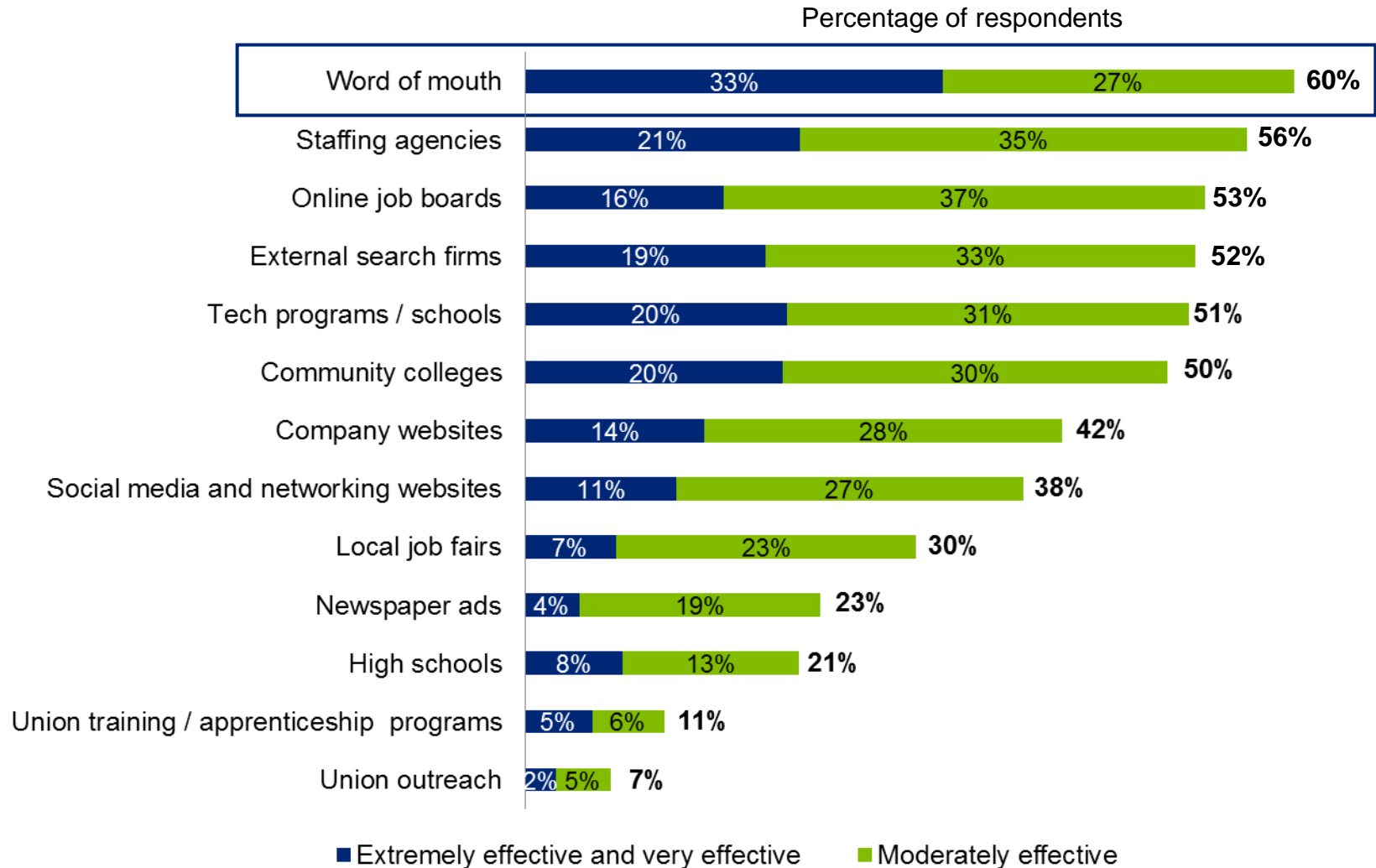
# Closing the gap

*“We cannot fully realize the renaissance of US manufacturing unless and until we solve the manufacturing skills gap. Manufacturers are the key to solving this problem. By aligning together and clearly defining their needs—and speaking with one voice, they can work with secondary and post-secondary schools and government to create a system that attracts, develops and retains skilled manufacturing talent.”*

Dr. Charles (Chip) Blankenship, President and Chief Executive Officer, GE Appliances & Lighting

# Top sources of employee recruitment

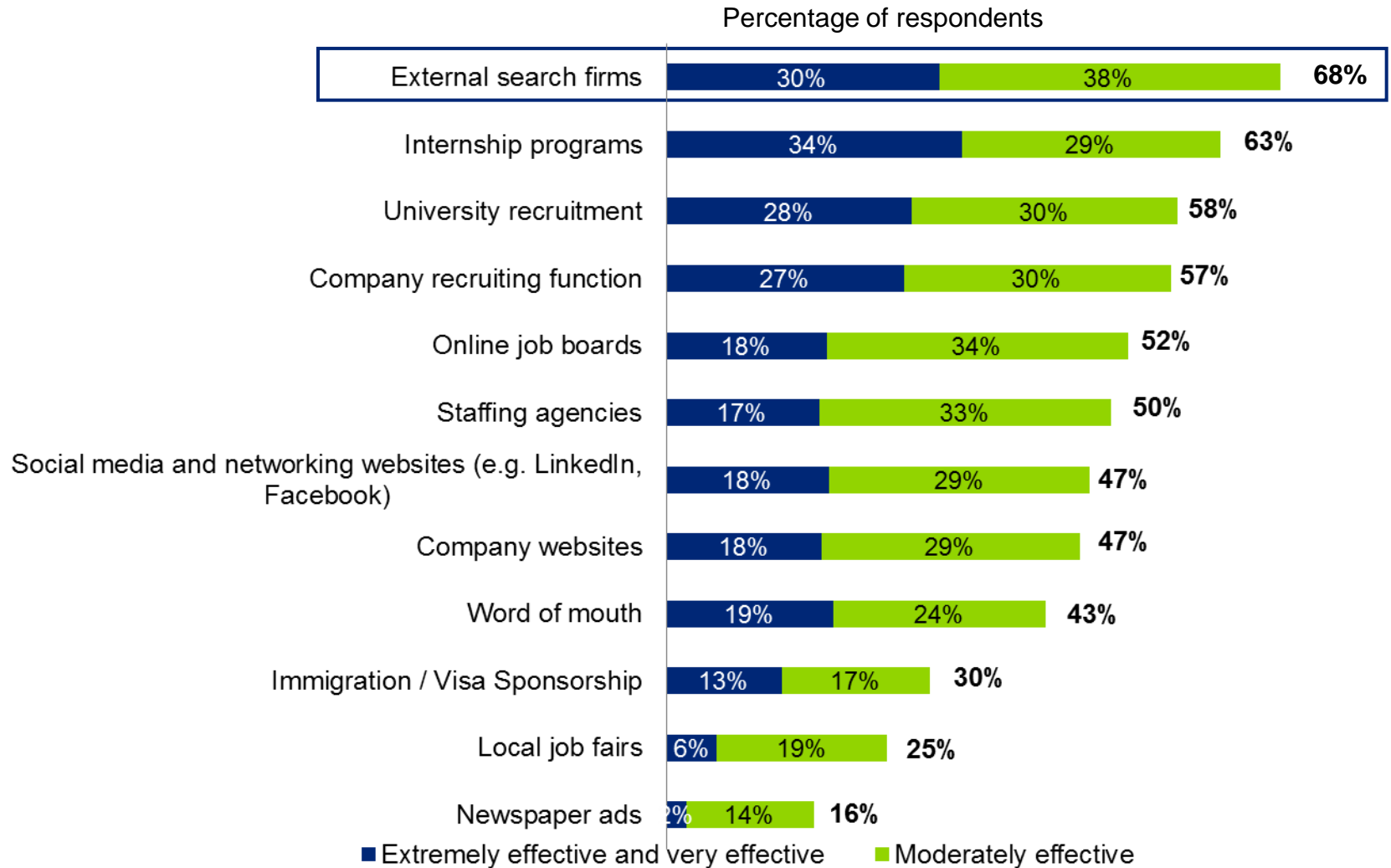
Top sources of employee recruitment for skilled production workers



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# Top sources of employee recruitment

Top sources of employee recruitment for engineers, researchers and scientists



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# Build the talent pool and optimize practices for attracting skilled workers

Engage in STEM initiatives early to build the pipeline

- Involvement with local schools and community colleges
- Collaborate with non-profit organizations like The STEM Academy and Project Lead the Way, that are leading providers of K-12 STEM education
- Public-private partnerships to fund education, apprenticeship programs, and workforce programs

Develop an integrated communications strategy

- Collaborate with the marketing function to develop campaigns to attract prospective candidates
- What Millennials value

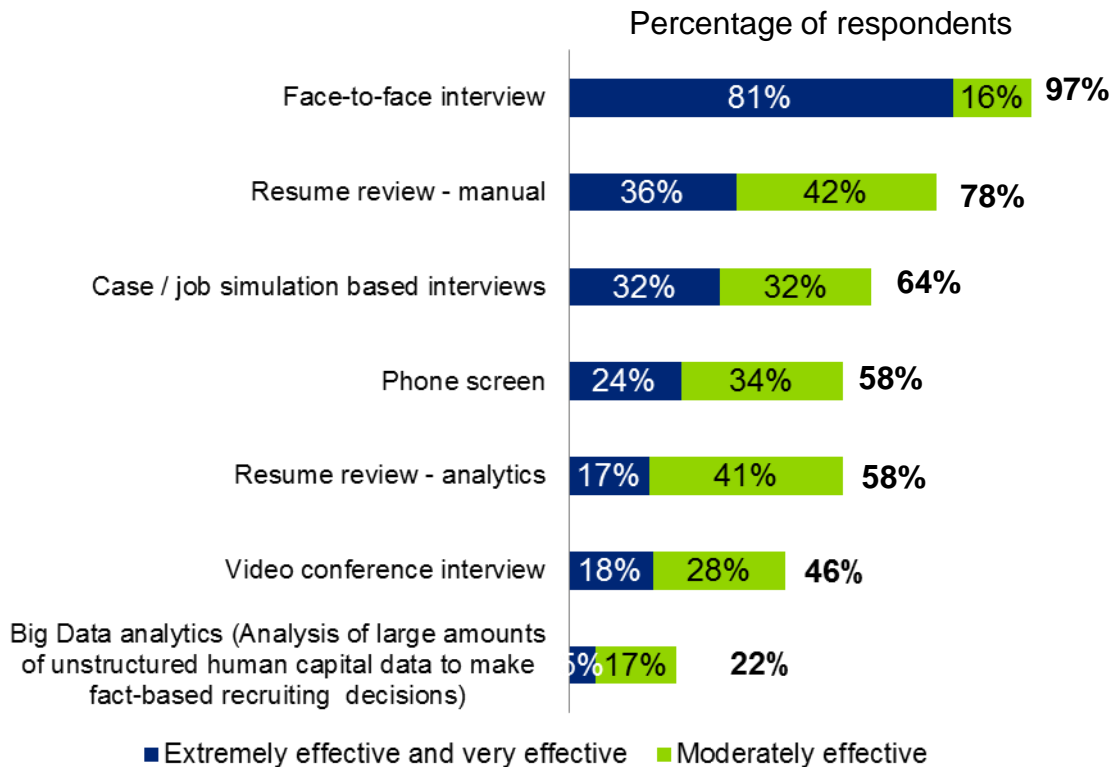
# Poll question #3

What do you believe is the most effective method for narrowing down candidate selection?

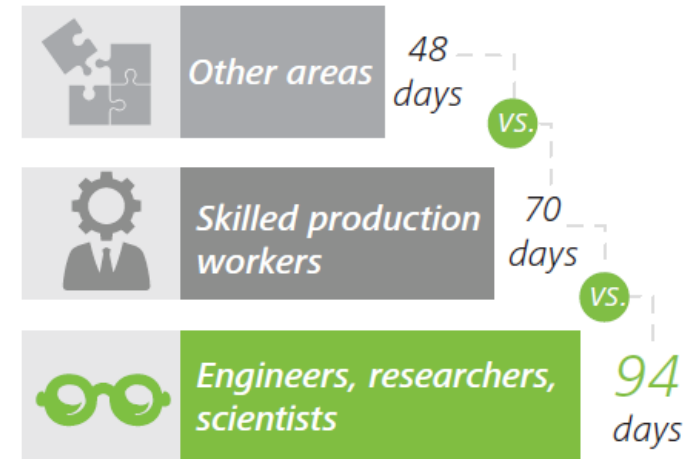
- Face-to-face interviews
- Resume review
- Job simulation based interviews
- Phone screen
- Resume review using analytics
- Don't know/not applicable

# Enhance candidate-screening practices to select and deploy employees

Most effective methods used for narrowing candidate selections..



It takes **90+ days** to recruit highly skilled workers



# Enhance candidate-screening practices to select and deploy employees

## Look inside the walls

- Harness this untapped potential to close the skills gap by thinking about their employees as a cluster of competencies

## Do not look for the needle in the haystack

- Focus on competencies and potential

## Use analytics effectively

- Information readily available can help leadership better understand prospective candidates and make decisions they were not able to before

# Invest in internal training and development programs

The most effective skilled production workforce development strategies cited by executives:

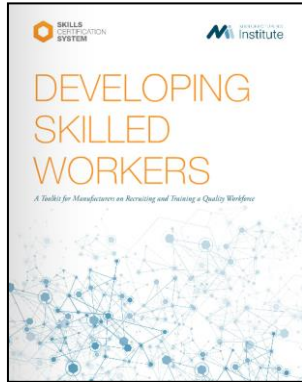


## Cultivating a learning and development strategy

- Build an integrated training strategy
- Build high-performing managers to create high-performing teams



# Use readily available resources

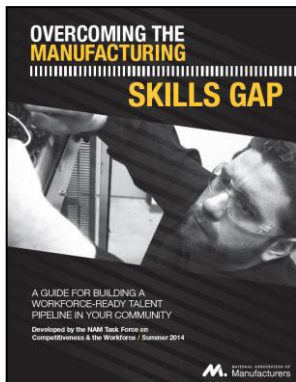


## Manufacturing Institute's NAM-endorsed *Manufacturing Skills Certification System*

- Portable, industry-recognized credentials based specifically on employer-identified skills



Examine and promote the role of women in the manufacturing industry through research, leadership, and recognition



## The National Association of Manufacturers *Guide for Building a Workforce-Ready Talent Pipeline in Your Community*



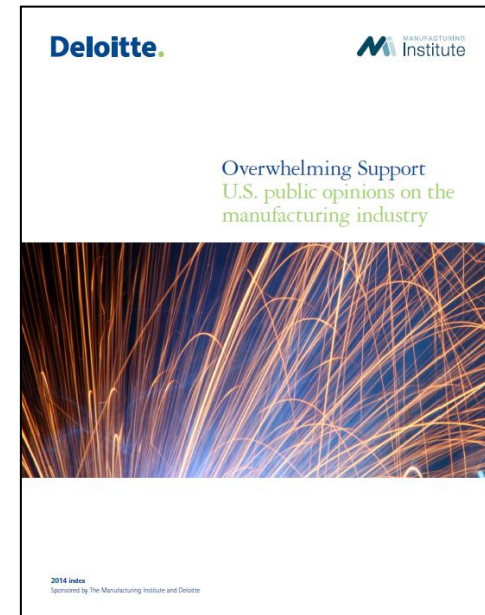
Dream It. Do It.

- Collaborate with a respected national platform to promote manufacturing as a top tier career choice in the United States

# Change the public perception

Change the public's perception in order to grow the overall pool of interest

- Manufacturing Day ([www.mfgday.com](http://www.mfgday.com))
- Public Perception Study



# Poll question #4

Have you participated in a Manufacturing Day event during the past three years?

- Yes
- No
- Don't know

# Use a multifaceted approach to mitigating the skills gap

The impact is real and substantial

The resulting consequences are material

A multifaceted approach is critical

- Position industry as a viable career option
- Rethink sourcing and recruiting strategies
- Engage with community stakeholders such as local schools and community colleges
- Collaborate with federal and state governments in supporting improved education systems

# Poll question #5

Would you like to receive a copy of “The skills gap in US manufacturing: 2015 and beyond” as well as other related Process & Industrial Products insights from Deloitte?

- Yes
- No

Question and answer

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