

Some Field Work, So Few People:
Current Workforce Reallocation and Renewal

Chip Andrews
Speaker

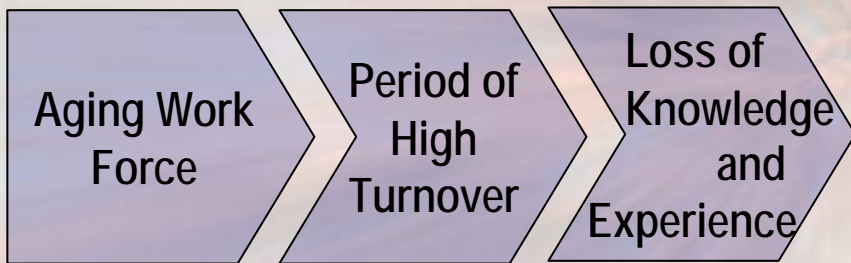


Chairman,
FMI Corporation

Define the Problem: Explore the Solutions

engineering & construction contracting conference

Challenges vs. Opportunities



Challenges...

Skill Shortages

Leadership

and Opportunities

Workforce Engagement

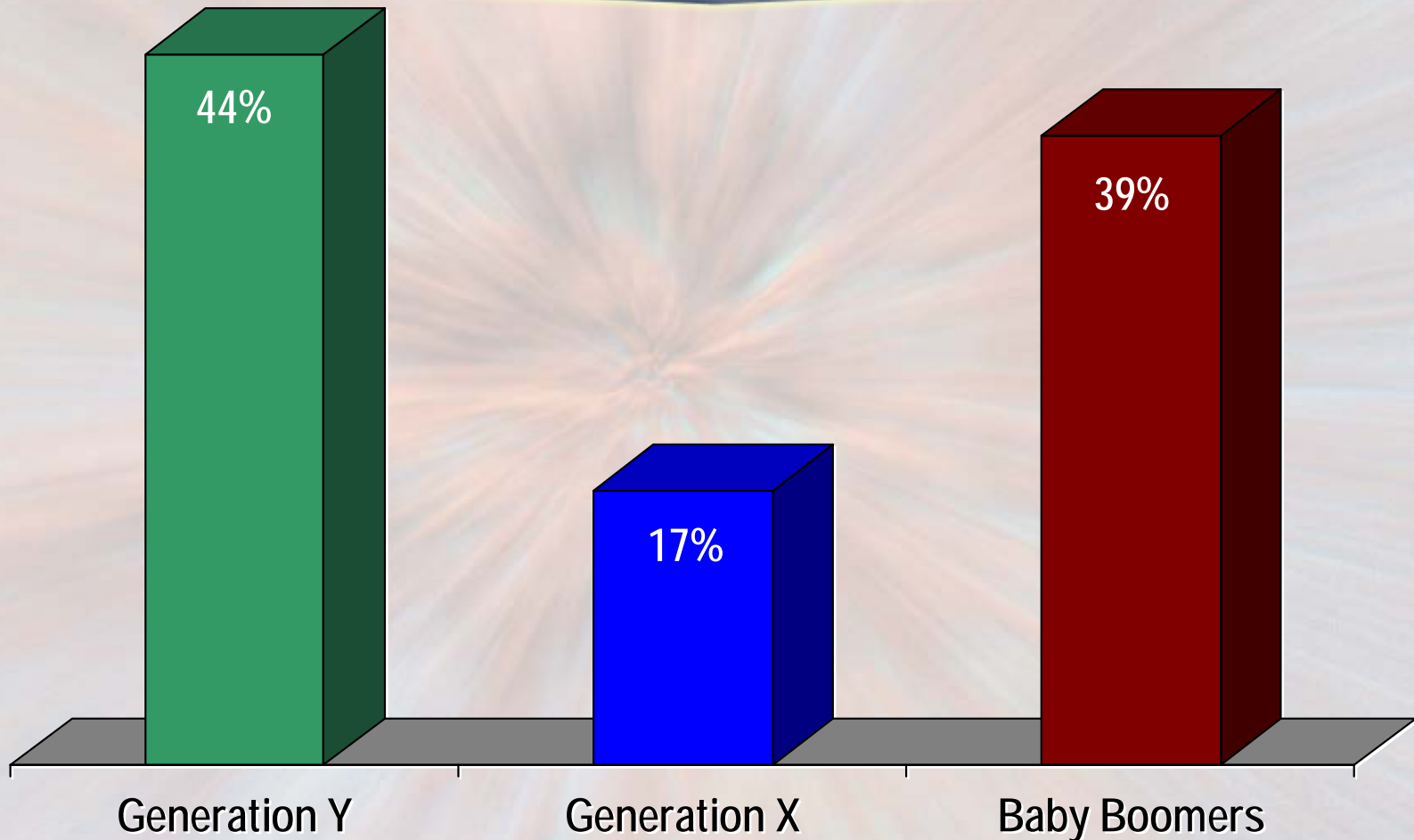
Increasing Diversity

Performance Culture

Organization Development

engineering & construction contracting conference

Percentage of the U.S. Workforce by Generation



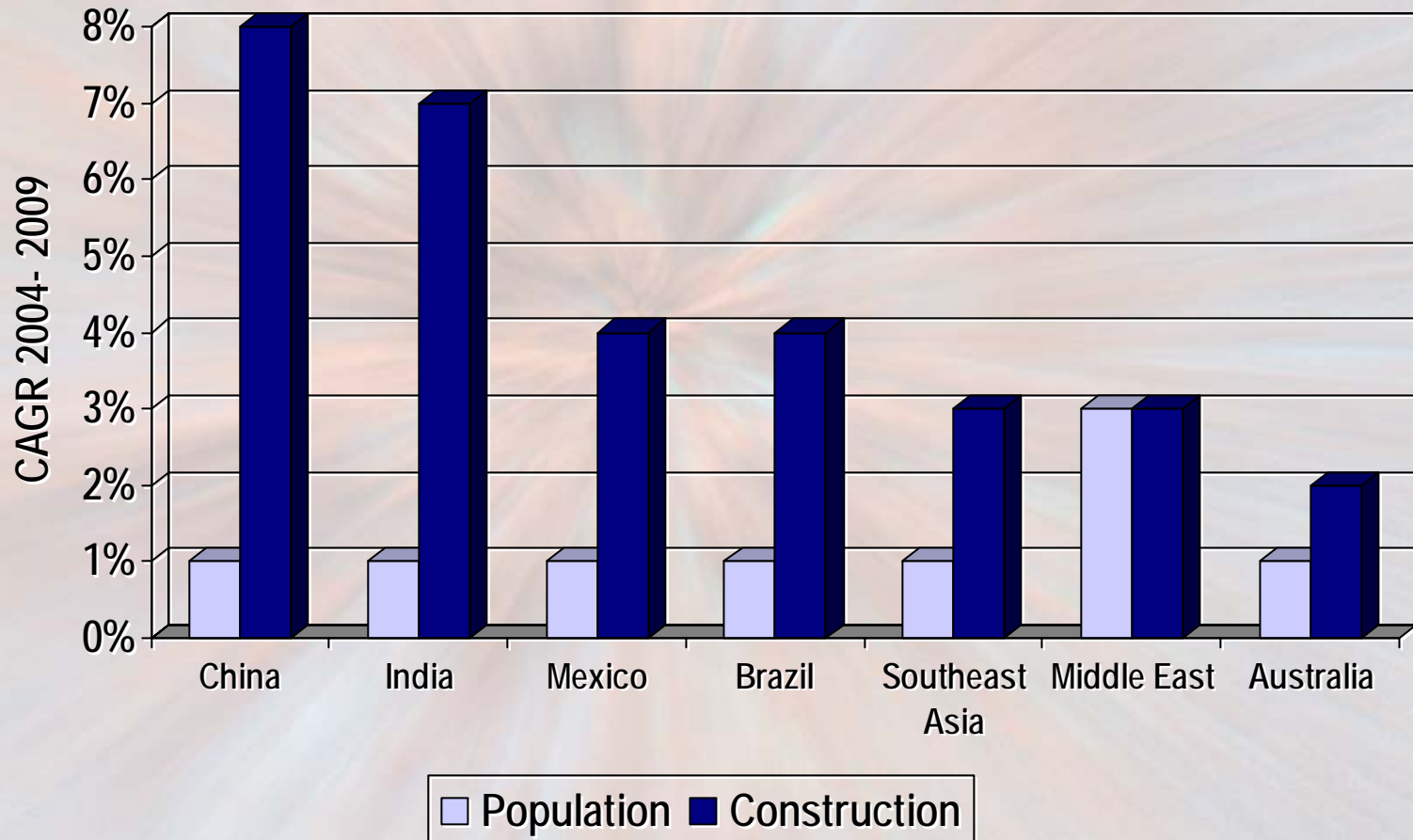
engineering & construction contracting conference

International Aging

- Worldwide, 60 year olds are growing 1.9% per year, 60% faster than overall world population
- UN Population Division predicts by mid-century elderly will outnumber children for the first time
- China may be the first country to go gray before it reaches developed status
- Indonesia, India, Brazil, Mexico, the Philippines, Iran, Egypt will boast big, growing pools of workers for two more decades

engineering & construction contracting conference

Population Growth vs. Construction Demand



engineering & construction contracting conference

38TH ECC
CONFERENCE

THRIVING TODAY & TOMORROW



U.S. Construction Industry Employment

Skill Type	2003 Employment	2010 Demand	% Change
Civil Engineers	211,280	256,000	21%
Electrical Engineers	149,540	175,000	17%
Mechanical Engineers	214,070	251,000	17%
Construction Laborers	845,890	926,000	9%

Source: Bureau of Labor Statistics, *Occupational Employment and Wages*, November 2003 and Bureau of Labor Statistics, *Employment Outlook: 2010*

engineering & construction contracting conference

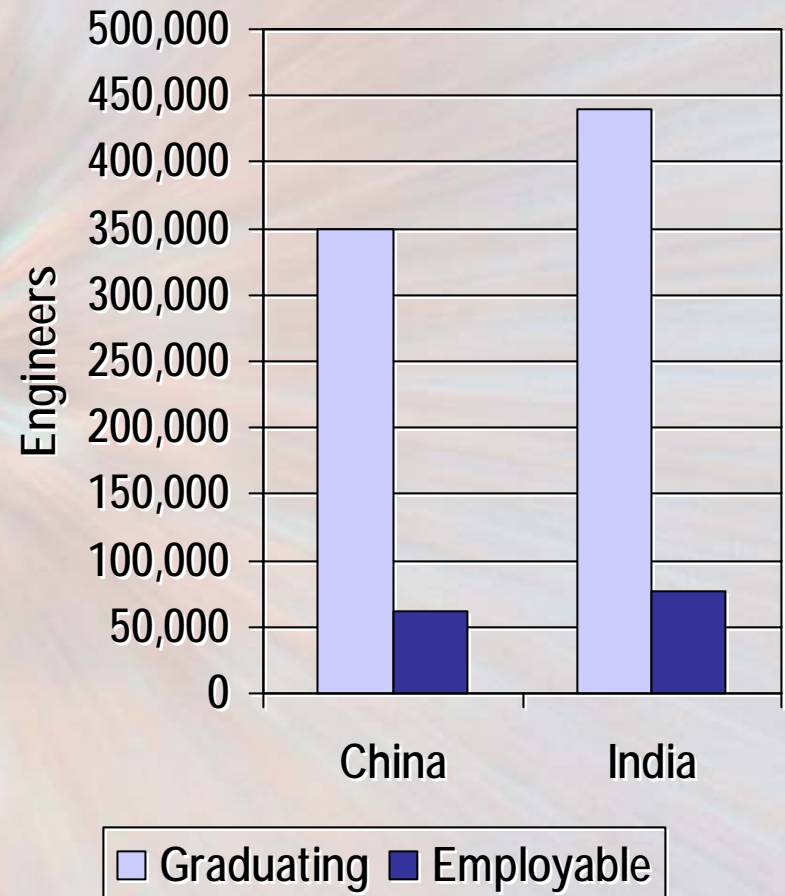
38TH ECC
CONFERENCE

THRIVING TODAY & TOMORROW



International Sources will be Inadequate

- Of nearly 800,000 Asian engineering graduates, McKinsey says only 10% to 25% are employable by multinationals
- Only partially because of language challenges
- Culture stresses theory over practical application
- Citigroup: India's talent pool isn't deep enough to meet demand



engineering & construction contracting conference

General Strategies/Policy

Strategy	Primary Markets	Challenges
Reduce benefits Extend retirement Increase worker's pension contributions	East Asia Europe Brazil	Overcoming entitlement mentality 90% of workers rely on almost entirely on public pensions
Accept greater number of immigrants	Australia Middle East U.S.	Cultural aversion Political positioning
Raise participation rates of women and minorities	Australia Southeast Asia	Bias against norms

engineering & construction contracting conference

Best Practices

“How can an organization build and maintain competitive advantage in the face of a labor shortage that will affect multiple layers of the workforce, including management, engineers, and field labor, and persist for the next decade?”

1. Retention of Generation X
2. Labor Saving Process & Technology Adoption
3. Attraction of Generation Y
4. Training – Management & Technical

engineering & construction contracting conference

Project Execution University

J. Ray McDermott

engineering & construction contracting conference

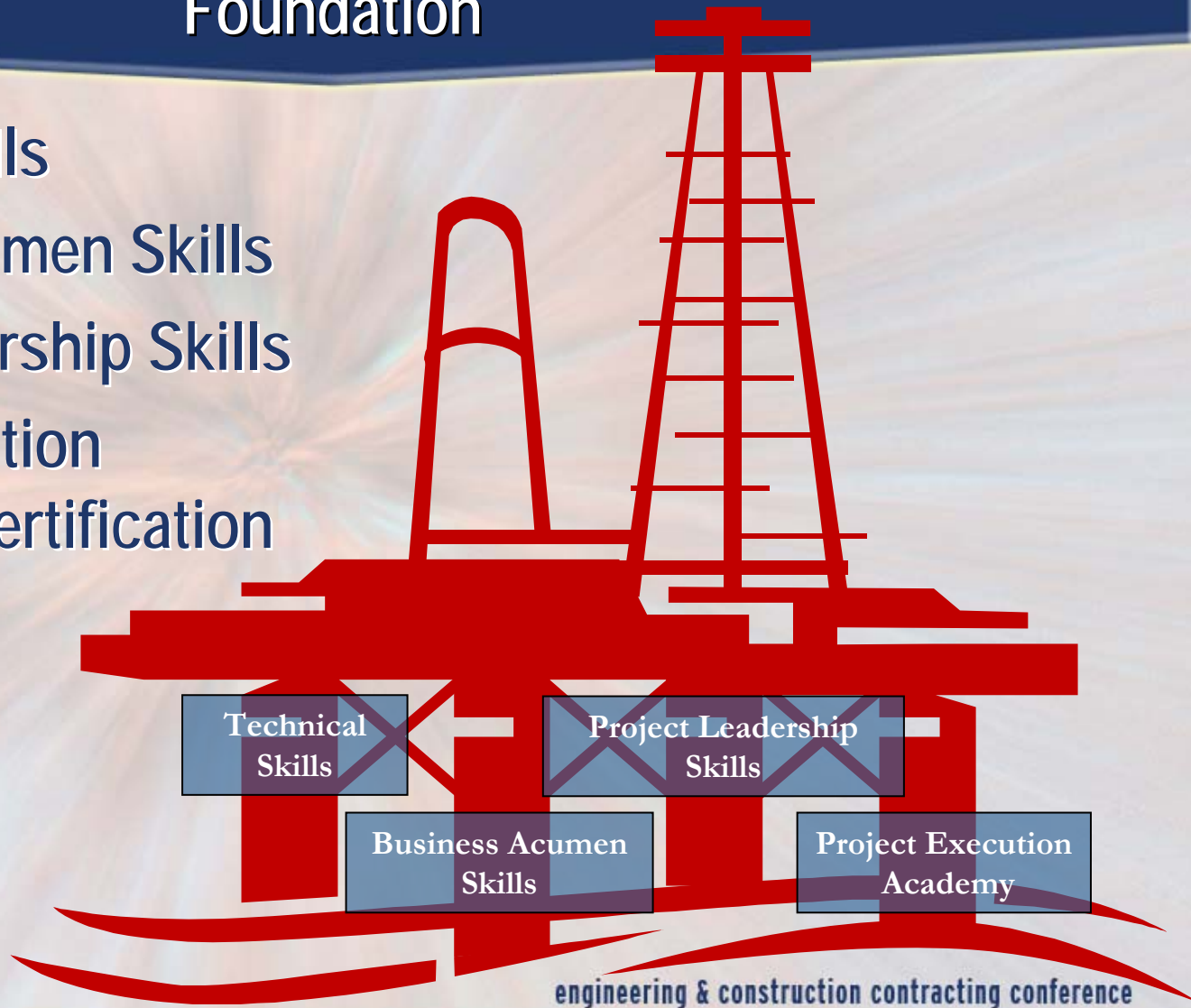
38TH ECC
CONFERENCE

THRIVING TODAY & TOMORROW



Project Execution University Foundation

- Technical Skills
- Business Acumen Skills
- Project Leadership Skills
- Project Execution Academy & Certification



engineering & construction contracting conference

Project Execution University Core Curriculum Summary

Curriculum Design

Technical Skills

11 Modules

Business Acumen Skills

3 Modules

Project Leadership Skills

10 Modules

engineering & construction contracting conference

38TH ECC
CONFERENCE

THRIVING TODAY & TOMORROW



Technical Skills

- Project Health, Safety, and Environment
- Project Risk Management
- Change Management and Forecasting I
- Change Management and Forecasting II
- Planning and Scheduling
- Project Setup
- Constructability and Value Engineering
- Subcontract Management
- Procurement and Materials Management
- EPC Management
- Project Closeout

10 Courses

11 Modules

44 Hours of JRM Specific Technical Training

engineering & construction contracting conference

38TH ECC
CONFERENCE

THRIVING TODAY & TOMORROW



Business Acumen Skills

- Financial Module I
- Financial Module II
- Financial Module III

3 Courses

3 Modules

12 Hours of JRM Specific Business Acumen Instruction

engineering & construction contracting conference

38TH ECC
CONFERENCE

THRIVING TODAY & TOMORROW



Project Leadership Skills

1. Project Team Organization
2. Project Communications
3. Negotiating Skills I
4. Negotiating Skills II
5. Presentation Skills I
6. Presentation Skills II
7. Client Relationship Management I
8. Client Relationship Management II
9. Project Leadership
10. Personal Productivity and Time Management

7 Courses

10 Modules

40 Hours of JRM Specific Leadership Training

engineering & construction contracting conference

38TH ECC
CONFERENCE

THRIVING TODAY & TOMORROW

