The Construction Labor Shortage . . . Dealing with the Challenges -Locally & Globally

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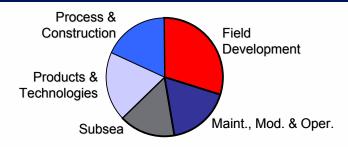


Aker Kvaerner in Brief

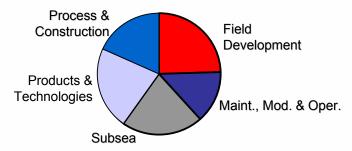
Company overview

- A leading global provider of engineering and construction, technology products, execution, service and integrated solutions
 - Oil and gas
 - Process industry
- Approximately 24,000 employees and 8 to 9,000 agency workers in around 30 countries
- Part of the Aker group

Revenues/EBITDA¹



Revenues NOK 58 billion



EBITDA NOK 3.6 billion

Note: 112M rolling Q4 06-Q3 07







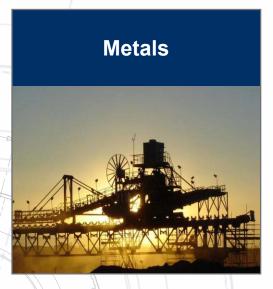
Process & Construction

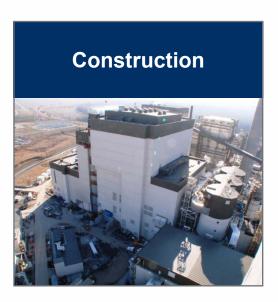
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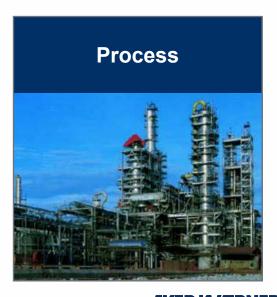
part of Aker

Process & Construction

- Leading global supplier of management, design and construction services for major projects spanning
 - Onshore Oil & Gas
 - Chemicals, polymers, syngas and refining
 - LNG regasification
 - Metals and mining
 - Power generation







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part opfathteofAkkeeigroup

Effort

Reward

Survival Instinct

Health Needs

Social Needs

Cultural Frame

Capability

Motivation

me,

you,

locally,

globally

Basic needs Survival Comfort Stability **Personal Gain** Non-work Time Quality of Life

Advanced needs

Recognition of these factors is essential for understanding labor and the myriad of issues that surround it.



They're getting harder to find!
...harder to attract!
...harder to keep!

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...and they are costing more and more!



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Slide 6

February 15, 2008

If you're in doubt, just Google the phrase "...construction labor shortage..."

You'll get page after page of hits from many cities, states, and much of the world.



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Construction industry braces for long-term labor shortage ...

Construction industry braces for long-term labor shortage.

www.bizjournals.com/sacramento/stories/2004/04/26/focus7.html - 105k -

Cached - Similar pages

DJC.COM: Tuesday, January 29, 2008, provided by Seattle Daily ... @

Construction is the second largest employer in the country (after government) and it is facing an unprecedented, nationwide shortage of skilled labor. ...

www.djc.com/special/construct99/10050580.htm - 14k - <u>Cached</u> - <u>Similar pages</u>

Nation's Building News Online for June 6, 2005 🥝

Grant to HBI Addresses Construction Labor Shortage. The Home Builders Institute (HBI), the workforce development arm of NAHB, has received a two-year \$75000 ... www.nbnnews.com/NBN/issues/2005-06-06/Endowment/index.html - 45k - Cached - Similar pages

Did Lack of Respect Lead to a Growing Labor Shortage?

Other reasons for **labor shortage**. By David Kusnet. ... In the Washington, D.C., metropolitan area, because of a **shortage** of skilled **construction** workers, ...

www.epinet.org/content.cfm/webfeatures_viewpoints_employment - 15k - Cached - Similar pages

Florida Launches Construction Training to Ease Labor Shortage 🥝

Florida Launches Construction Training to Ease Labor Shortage. 12/15/2005.

TALLAHASSEE, FL -- Florida's Lieutenant Governor Toni Jennings this week unveiled ...

www.buildingonline.com/news/viewnews.pl?id=4715 - 26k - Cached - Similar pages

Jordan Schrader Ramis PC - Attorneys at Law - Construction Labor ... 📀

Given the multiple causes of the **construction labor shortage**, a myriad of solutions will need to be developed to ensure the long-term health of the industry ... www.jordanschrader.com/articles/article0257.html - Similar pages

JS Online: Minorities, women could help fill labor shortage 🥝

Feb 17, 2006 ... Minorities, women could help fill **labor shortage** ... The **Construction Labor** Management Council has an ongoing outreach program and has hired ... www.jsonline.com/story/?id=402155 - 48k - Cached - Similar pages

Partnership Communicator Newsletter 🥝

construction: LABOR SHORTAGE? Table of Contents ... Craft Labor Supply Outlook, 2005-15 - This Construction Labor Research Council report, downloadable (as ... sheetmetalpartners.org/newsletters/index.cfm?fuseaction=view_article&id=2929 - 6k - Cached - Similar pages

Miami-Dade construction labor shortage 🥥

But Coscan Construction President Michael Neal says South Florida is facing not a labor shortage but a glut of projects. In reality, he said, ...

www.floridacdc.org/articles/050713-1.html - 7k - Cached - Similar pages

Signs of the times!

...will the last worker leaving Poland -please turn out the lights!

-from the link page of a Canadian construction employment website

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Slide 8







CONVERSIONS









































...from

- -your local renovation contractor
- -the subdivision homebuilders,
- -the infrastructure contractors,
- -the heavy industry contractors

...feeling the pinch

- -energy onshore and offshore,
- -power generation,
- -manufacturing,
- -marine,
- -roads, highways, & bridges,
- -schools,
- -disaster reconstruction

...happening

- -in the ship channel,
- -whole Gulf Coast,
- -most major cities in USA;
- -Canada,
- -South America,
- -Europe,
- -the Middle East Countries,
- -India,
- -Australia,
- -Africa.



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February 15, 2008

It's been sort of like the global warming issue:

...we've known about it,

...debated it for several decades,

...it appears to be happening.

We've been talking and debating the construction labor shortage for quite awhile too -and not so quick to take care of the issues either.

...and it is happening today!

... and there is no magic bullet for either one !



Only challenges, hard work, and changing our ways...

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aker kværner"



Where did they go?

Sept. 29, 1932 Photo by Charles C. Ebbets/ © Bettmann Corbis

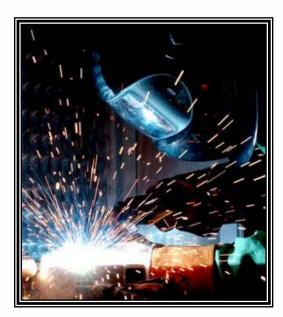
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- "They" retired across USA, Canada, Europe, and Australia.
- In their father's foot-steps, many sons entered the construction trades.
- Now they are upon retirement too.
- And their sons have an array of career alternatives

...Fewer and fewer young people choose construction trades as a livelihood

...Lop-sided educational stratification, professional vs. vocational hasn't helped



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Sept. 29, 1932 Photo by Charles C. Ebbets/ © Bettmann Corbis

"Son, it's a good living, you won't get rich, but you won't go hungry either!"

"Learn to push a pencil, not a wheelbarrow" -as many fathers said to their sons.

For the 3rd generation... alternative career paths opened, business booms, prosperity, credit, and the electronics age

Where did "they" go? >>>

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- The post-war construction workforce has sunset
- Their knowledge and skills not easy or quickly replaced
- Construction trades unions; slowly lost dominance over 5decades,
 - -their apprentice programs slowly dwindled



- Fewer training venues, tarnished industry image, boom-bust cycles, varying work locations that followed the market, -it's hard to stay with a construction livelihood.
- ...add a dose of recent prosperity, and today's middle aged or older craft worker, is increasingly prone to chase quality of life, not only \$\$\$!

Aging USA Construction Workforce

- As of 2003, the average age of the USA construction worker was 38, compared to 33 in 1988.
- The work force in the construction industry currently:
 - continues to mature and leave the work force, without adequate replacement.
 - has more workers in their prime working years than other industries, but they leave construction at an earlier age.
 - is becoming increasingly Hispanic in the USA.

US DOL - Bureau of Labor Statistics and Construction Labor Research Council

...and it's not just the craft trades folks!



- All tiers of construction professional and supervisory talent are also in short supply
- Wages, benefits, perks, and assignment conditions are rising for them too.

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Separating Fact from Fiction – Hard to Do at Times

Circumstances very dynamic, and never seem to materialize fully as bad, or as good, as predicted.

 Not all projects proceed, and it seems that delays and cancellations, don't always make the headlines quickly

Panic can breed self-serving response

"the sky is falling! ... yes, yes, I believe it is!" ... But... -maybe not, every data point needs to be challenged and confirmed

Meaningful and real-time data remains elusive.

- State agencies and local trade groups are inconsistent in gathering and publishing data, and sometimes parochial about sharing.
- Seems so many sources use the same few data points.



Separating Fact from Fiction – Why Data is Vital

Data - "the instrument panel"

- To get a real view of availability
- Gain insight into changes of workforce make-up
- Forecast distribution of trades by specialty and location; nationally, regionally and by state
- Inventory the occupational skill sets
- To understand trends and worker migration
- Track / predict the mobility and portability of labor force
- To understand craft composition for different project types

Separating Fact from Fiction – Hard to Do at Times

Data – "the instrument panel"

- Real data on compensation and availability is sparse, hard to come by, and often not a real-time forecasting aid.
- Most state agencies and the USDoL too slow in reporting.
 - months, or a full year behind
 - tend to report in broad nebulous categories
- Only a few locations around the US have broad based, actively supported construction industry associations like our Houston ABC chapter, or the HBR.
- On the international front, other than Canada and Australia, real time and comprehensive international labor compensation and availability data is very hard to find!

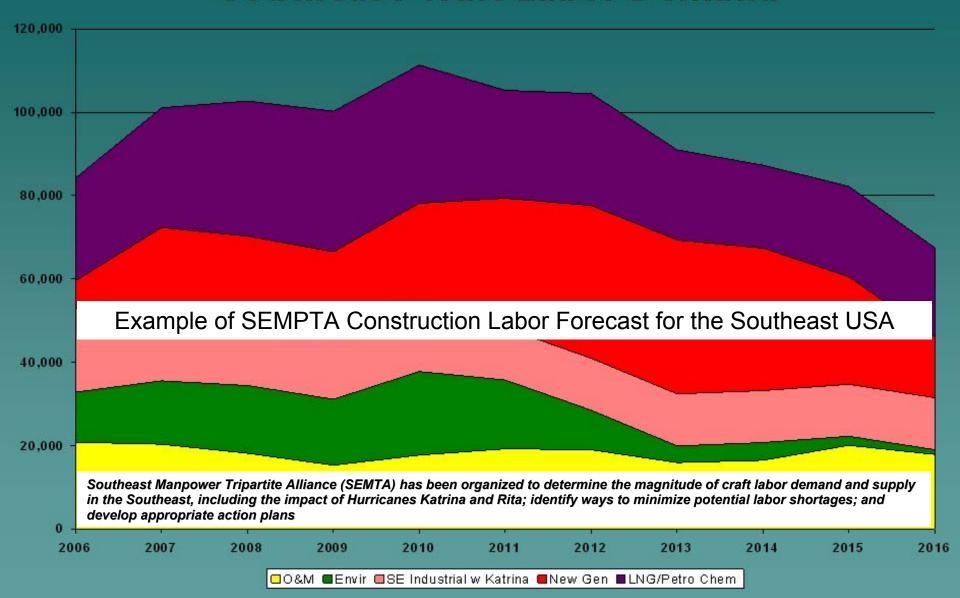
Separating Fact from Fiction – Real Information

- Associated Builders and Contractors, Inc. (ABC) and local chapters
- Associated General Contractors (AGC) of America and local chapters
- Building and Construction Trades
 Department, AFL-CIO and its affiliates
- National Construction Alliance (NCA)
- Business Roundtable
- Construction Industry Roundtable (CIRT)
- Construction Users Roundtable (CURT)
- Department of Labor
- National Petrochemical and Refiners Association (NPRA)
- National Center for Construction Education and Research (NCCER)
- SEMTA

- Bureau of Labor of Statistics
 Occupational Employment Surveys
- Construction Labor Research Council's Database of Labor Costs
- Department of Commerce's Economic Census of Construction Industries
- McGraw-Hill Construction Dodge Construction Project Data
- McGraw-Hill Construction Labor Demand Forecast
- SEMTA's* Southeastern U.S. Open Shop Craft Census Study
- Construction Sector Council (Canada)
- Construction Labor Market Information (LMI) Program (Canada)
- Construction Labor Research Council (Canada)

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Southeast Craft Labor Demand





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Marketplace Reaction –the Stakeholders

Owner

 Delay projects, scale back scope, alternative or foreign locations, postponements, more focus on Contractor's resource capability

Contractor

 Selective bidding, rejection of onerous LD's, accepting fewer fixed price contracts, seeking wage rate escalation safety valve clauses

Labor

 Open shop moving towards union wage rates, unions eyeing opportunities to seize or recapture some legacy markets,

Worker

Everyone's an entrepreneur now, pushing for higher wages, incentives, benefits, perks, working conditions, accommodations, and even site comforts...(It used to be, "we pick you!" ... today, they pick us!)

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Marketplace Reaction -the Stakeholders

Owner

 1st / 2nd tier Owner's savvy, the rest of the pack is catching up and beginning to realize the magnitude of the issues

Contractor

 Only the well-informed, foresighted, innovative, and realistic companies can survive and perhaps prosper in this environment.

Labor

 Wages are up, perks are up ... but ... productivity, quality, and safety declining

Worker

Internet construction job postings, cell phones, text messages, and blackberry's the norm for savvy craft workers. They're more "real-time" than many companies. Money still rules the attraction equation, until the next project throws out more money, but location, climate, and site conditions creep in as a differentiator

Search for pockets of labor

 In regions of the country that are may not be enjoying a fully robust construction marketplace we now actively seek out prior employees, their associates, and any new ones we can find to recruit

Placing work in "slower" areas of the US & N.A., & Overseas

 But vendors and fabricators with labor resources, a shop-window, and output capacity are getting harder to find, and they know they have a sought after situation, and can command premium pricing.

Modularization & pre-assembly

 Very popular, but fabricators are full up, and it requires forethought and early completion of engineering and procurement, to be useful

Global procurement

 Finding areas around the world that can supply manufactured goods at acceptable price and schedule becoming harder, and requires an extensive global network

Dynamics of the commercial arrangements

- Contractors more selective in pursuit of projects
- More pre-project alignment by constructors with engineering firms
- More Joint Venturing
- LSTK bids proving to be contingency and escalation rich
- Cost Reimbursable with or without Bonus Penalty popular
- Open book bid, or negotiated bid, converted to lump sum gaining popularity.



Emphasis on the design deliverable!

- Rework prohibitively expensive when resources are scarce
- Greater levels of detail needed in the deliverable to make up for educational and language barriers
- Greater cooperation required between engineering and construction to plan the least labor intensive design.
- Design of a safer job required because the workers are not as experienced or knowledgeable of the site hazards.

*a*ker kværner*

Changing the Perceptions

Changing the Project and Management Perceptions

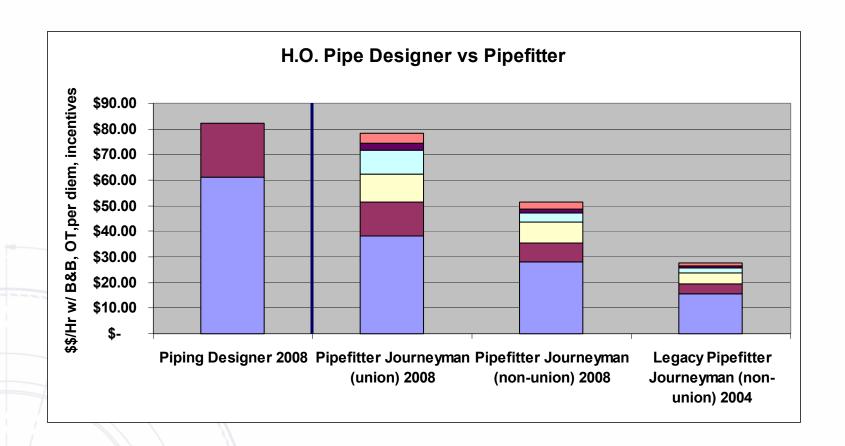
- The welders aren't lined up at the hiring centers!
- The "bench" isn't full of able, willing, and qualified workers!
- The skill levels aren't what they used to be!
- There's less productive output and more opportunity for injury!
- Language and communication are problematic
- And that sacred legacy norm;

"it's cheaper to do it in the field"

– it died!



Changing the Perceptions





February 15, 2008

Internationally, HSE Needs Even Greater Attention

- Safety culture is only dominant within established companies
- Owner/Contractor focus varies from one project client to another
- HSE management systems vary; maybe not required or implemented
- Not all incidents are reported and investigated
- Sharing of lessons learned not fully adopted, or hits cultural wall
- HSE best practices not shared; sometimes not even known
- In developing nations, workers unlikely to complain about unsafe conditions



Labor Importation / Immigration

- Juicy political policy issue in the near term
- Over-zealous regional / federal political, and homeland security agendas, make it uncertain for future
- Visa program unsupportive of meaningful quantities needed
- Surprising acceptance in some locales, where it has been off the national radar screen
- Even some trades unions embracing it



...but at the root of the issue it's about competencies, then headcounts ...

Skills & Training

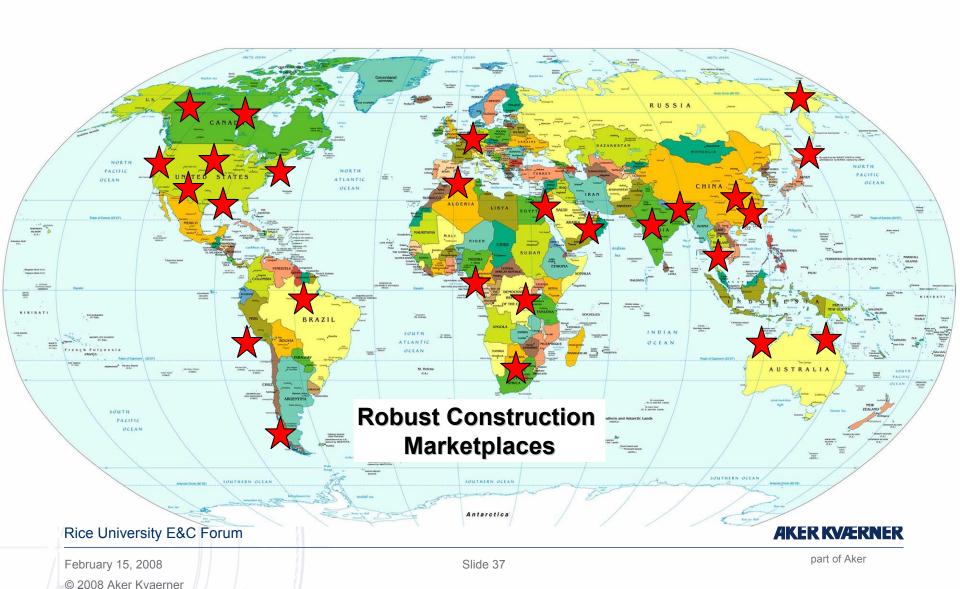
- The intense workforce shortage will drive craft training to be more accelerated and results oriented.
- Employers want new workers to come onto the job the first day, ready to work and produce, safely!
- Even in the union environment, the contractors and owners need to invest more time and money to create job site and regional training facilities for the unions to use to develop worker skills and entice more people.
- More public-private industry partnerships needed to address the problem and develop solutions
- Private industry needs to leverage current federal and state programs

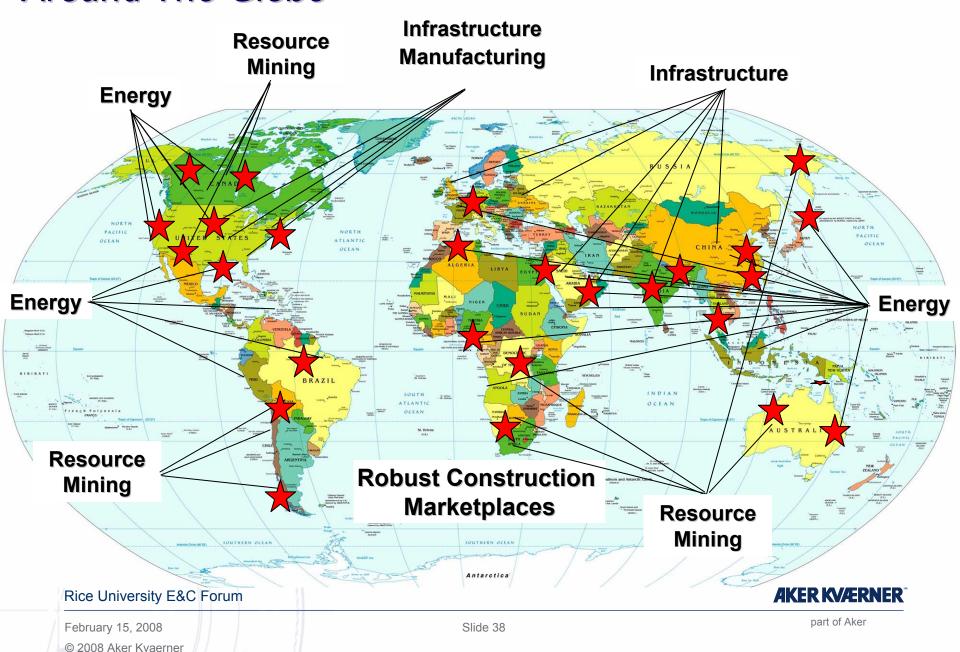
Current strategies include:

- Importing labor, allowing immigration, facilitating workforce migration (easier globally, than locally)
- Education, training, skills enhancement, apprenticeship, job opportunity
- Applying the experience, "the gray hair", to teach and mentor the less experienced.
- Looking deeper and across industries for crossover construction workers that can be integrated quickly.
- Language classes in both English for Hispanic workers and Spanish for US workers/supervisors.

Current strategies include:

- Many unions now better at balancing attrition versus incoming candidacy for apprenticeship programs to sustain demand.
- Recruiting –it's more personal now, the promise of skills enhancement remains an attraction.
- Making use of the non-traditional construction labor segment:
 - Workers with Disabilities
 - Returning veterans (Helmets-to-Hardhats Program)
 - Returning veterans with disabilities (Wounded Warrior Program)





Effort

Reward



U.K. to experience a building bonanza over the next 5years, increasing strain on the availability of skilled labor

A £4.7bn government program to renew or rebuild every secondary school in the country, dwarfs developments for the 2012 Olympics.

A lack of trained labor in recent years has sucked in migrant workers from east European countries, such as Ukraine, Poland and Lithuania, to fill gaps on building sites.

It plans to launch a series of national skills academies on large building sites to provide training for would-be construction workers.

UK construction sector faces skills shortage

By Andrew Taylor, Employment Correspondent Financial Times

Published: March 4 2007 22:03



Almost every Indian company -- big or small -- that has some expertise in construction finds itself flooded with orders, 3 to 4 times its annual sales. The size and pace of orders could threaten the development of the country's infrastructure.

"Execution is the biggest issue in India today, especially on time and within budget," says Pratyush Kumar, president and chief executive officer of GE Infrastructure, India.

Experts say that a shortage of skilled talent and the limited ability of capital equipment suppliers to meet demand mean that skillful project management and innovative solutions will be necessary to prevent bottlenecks.

India's planned infrastructure outlay over the next 5-years is predicted to rise from \$150 billion to almost \$475 billion.

-excerpts from India's Construction Boom: Boon or Bust? November 01, 2007 in India Knowledge@Wharton

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It's difficult to fathom the words "talent shortage" in a country of a billion people that's getting younger over time. But speak to any infrastructure builder, and you hear anecdotes about shortages of trained fitters, welders, masons and plumbers.

Both engineering and blue-collared skilled workers are in short supply. Fitters and welders are not available in the numbers you want. The industry also needs mechanical engineers who have worked in capital goods industries and would like to pursue a career [in that sector] rather than switch into software," says Allen Antao, vice president, process equipment, at Godrej & Boyce Manufacturing Co.

"Once, India had such a supply of labor that we never thought we'd run out, but today things are certainly moving towards that," says Satish Magar, of Magarpatta Township Development & Construction Company, in western India.

-excerpts from India's Construction Boom: Boon or Bust? November 01, 2007 in India Knowledge@Wharton

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Realizing the need for skilled vocational staff, the industry has begun collaborating with academic institutions to either train staff for plumbing and masonry type work, or to set up in-house training programs. "We are tying up with industrial training institutes for education and vocational development as well as organizing local training at our school," says Godrej's Antao.

Training is important, because by mechanizing their operations, companies have needed to substitute low-end, semi-skilled artisans with comparatively high-end machine operators who are in short supply.

As a result, wages for crane operators and others with higher levels of expertise have risen faster than the average for other industrial workers.

-excerpts from India's Construction Boom: Boon or Bust? November 01, 2007 in India Knowledge@Wharton

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For instance, Sanjay Verma, head of ship power for Wartsila India, estimates that welders have seen their wages rise by 30% to 40%, while those for traditionally well-compensated naval architects and marine engineers have risen by 50% over a 3-4 year period.

"Contractors these days want to work with companies who will be a source of repeat business and will be regular in paying dues. In the past, it was difficult for these firms to be choosy about their clientele, but today, when they have people knocking on their door, they would prefer to work with people who will be around in the long term too," says Joshi.

-excerpts from India's Construction Boom: Boon or Bust? November 01, 2007 in India Knowledge@Wharton

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Saudi Arabia

Bahrain

UAE

Vernen

Onan

The departure of tens of thousands of illegal foreign workers from the United Arab Emirates under an amnesty has created a labor shortage in the country's booming construction sector.

About 300,000 workers have evaporated from the market, there is definitely a pressure in the labor market due to an ongoing shortage of skilled labor

The booming construction sector absorbs most of the hundreds of thousands of low-paid workers who come primarily from India, Pakistan and Bangladesh.

The shortage is now expected to trigger increased wages aimed at luring back workers who have had to leave.

ARAB NEWS Friday 7 September 2007 Amnesty Sparks Construction Labor Shortage in the UAE

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Saudi Arabia

Bahrain

Duban

Oman

Vernen

Wages in construction will have to increase for both skilled and unskilled labor and UAE firms now face the extra cost of training unqualified workers.

They will not come back for the same money. An Indian worker might now prefer to stay home where the construction sector is also booming, he added.

Meanwhile, workers who have decided to regularize their status in the UAE are now in a better position to demand more money and better working conditions when signing new contracts.

Workers are also becoming increasingly vocal in demanding that their poor working conditions improve, with some staging sit-ins and demonstrations even though public protests and unions are banned in the UAE.

ARAB NEWS Friday 7 September 2007 Amnesty Sparks Construction Labor Shortage in the UAE

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Hundreds of construction workers gathered near a building site in Dubai demanding better pay and protesting at not receiving annual air tickets to fly home

The mainly South Asian protesters were persuaded to cancel their protest after receiving assurances of better terms, the Gulf News daily reported.

Most of the exploitation of illegal workers in construction had been by manpower agencies rather than by the contractors that employed them.

Slide 47

GULF NEWS - Dubai 10 September 2007



The Engineering and Construction Department of China Petrochemical Corporation (SINOPEC),has signed a memorandum of understanding with Aker Kvaerner for the joint execution of projects in the international marketplace.

Aker Kvaerner and SINOPEC will selectively target opportunities internationally, with particular focus on expanding the relationship in the Kingdom of Saudi Arabia and other markets in the Middle East.

Aker Kvaerner and SINOPEC are currently working together in joint venture for the execution of a world scale polyolefins project in Saudi Arabia for SABIC. Aker Kvaerner's scope includes the overall project management services, the extended basic engineering and procurement of the critical equipment. SINOPEC is providing the detailed engineering and a significant proportion of the skilled labor required for the construction activities.

25 July 2006 Aker Kvaerner Press Release

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The supply of labor from rural areas is much less than previously thought, and China is shifting from labor surplus to shortage much faster than expected and this will result in rise of wages.

"Growth and Structural Change of Employment in China", was issued by the Institute of Labor and Economic Research of CASS. Previously it was believed that 1/3 of China's rural laborors, or 100 - 150 MM belong to the labor surplus. But research by the Institute has found that the number of surplus rural laborers under the age of 40 is only 52 MM, far less than previously thought.

The report concludes that the supply of labor in China will become more frequent and severe in character, and spread from coastal regions to central area - even to regions traditionally were exporting labor

The year 2009 will be the turning point.

CMW: Labor shortage to emerge 2009 11-May-2007Shanghai - Jinghua Times (Beijing)





Some of the largest construction projects on the planet are currently underway in Fort McMurray, Alberta. Canada's oil sands, long recognized as a "fuel of the future", have rather suddenly become a fuel of the present: a critical component of global energy supply.

Given the tightness of the Alberta labor market, companies are looking at creative solutions to find skilled labor. Satisfying the oil sands labor market requires global solutions.

Engineers from South America, laborers from Mexico and welders from China are all finding themselves sucked into the giant swirling labor pool required to get oil sands projects off the ground.

Oil sands boom reveals labor shortage By Jim Letourneau

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The massive shortage of skilled workers is starting to impact on Australia's booming economy. Major development projects are being delayed, put on hold or outsourced to other countries.

Australia's next multibillion dollar LNG plant was outsourced to Indonesia as the skilled workers required were not available at home. The majority of the fabrication work was done in Indonesia before being shipped to Australia for assembly. This and many other mega-projects moving in the face of increasing skills shortages.

Government and Industry leaders are now becoming increasingly concerned that major development and resource projects worth up to \$100 Billion are under threat as *Australia simply cannot attract enough skilled workers to satisfy demand.*

The skills shortages are particularly acute in the construction.

The Great Australian Labour Shortage Crisis 16/11/2007 16:02:04

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The *global demand for Filipino workers will remain strong* despite fears of a recession in the U.S., a labor official said Thursday.

Many foreign countries, particularly developed countries, are still approaching the Philippines wanting to recruit Filipino workers, particularly skilled laborers and professionals.

Saudi Arabia, the United Arab Emirates, Qatar, Kuwait, Bahrain and Oman will offer job opportunities in the construction sectors.

2008, Reed Business Information, a division of Reed Elsevier Inc Global Demand For Philippine Labor Demand Seen Strong - AFPMANILA





East Asia, South Korea, Taiwan, Singapore, Brunei and Malaysia will continue to hire Filipinos for the construction and ship building sectors.

Australia and New Zealand also have a strong demand for construction workers.

There are <u>about 8 million Filipinos working overseas</u> and their remittances back home are a major pillar, propping up the country's economy.

2008, Reed Business Information, a division of Reed Elsevier Inc Global Demand For Philippine Labor Demand Seen Strong - AFPMANILA

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Closing Comments

Recognize the value of every craftsman's work hour

- Build work process efficiency around that work-hour, -capture all of it
- Really apply best practices
- Integrate Total Quality Management to avoid costly mistakes.
- Get the materials and design deliverables to the project on time, and right, the 1st time
- Use well-thought out pre-assembly and modularization techniques
- Fabricate in areas that can support the labor load
- Seek out the new; re-visit the old; -in installation methodologies and automation application

The most expensive construction worker is the one who isn't available when and where needed...

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Closing Comments

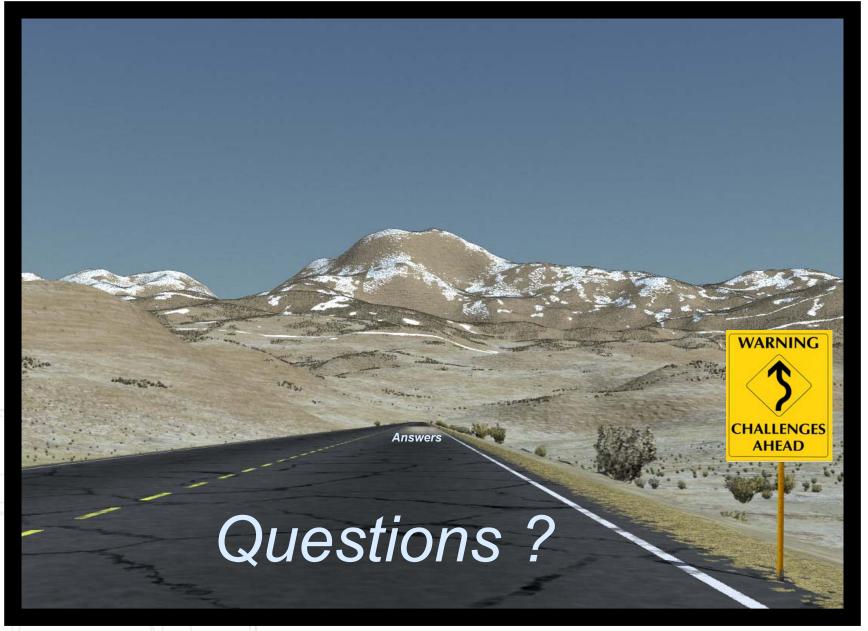
- Recognize that the pool of construction labor does not have infinite capacity.
- Understand the marketplace vis-à-vis your project timing and location ... don't be naive enough to believe, "make a job, and they will come!"
- Investigate from where and at what cost, will the labor component likely be supplied.
- Plan for attrition and turn-over. (orient the work, the support systems to be quickly understood, so that the next body that fills a position can come up to speed quickly). Accept the fact that more supervision will be needed to coach and train the folks who may be rising up the ladder quickly, albeit pre-maturely.
- Pay attention to the HSE and Quality aspects closely. Lesser skilled folks may be coming in the gate, and HSE and Quality requirements need to be established and taught.

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Closing Comments

- Develop and nurture, honest communication between all of the stakeholders.
- Build strong partnerships among critical project participants.
- Recognize the need for foresight, creativity, and adaptability.
- No time for "head in the sand"
- Recognize that until the craft labor marketplace reaches "steadystate", it will absolutely cost more for the labor to build any project.
- Don't start with an impossible expectation, and an inadequate project budget.





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