

Offshore Engineering: Where are the future Jobs?



Altair Engineering

The Shortest Distance Between Concept and Reality®



Where are the future jobs?

▲ India

▲ China

▲ Germany

▲ United States

▲ Everywhere!!



Altair Engineering, Inc.

- ▲ Founded in 1985
- ▲ Over 900 employees
- ▲ 2,000+ clients
- ▲ 2004 sales: \$90 million
- ▲ 60% Software/40% Consulting





Present State of Offshore Engineering

- ▲ Product design cannot be off-shored
- ▲ Product:
 - Market Expertise
 - Innovation
 - Creativity
 - Engineering judgment and evaluation
- ▲ Must remain close to the local client and local market
- ▲ Engineering activities that can be defined and controlled by processes can go anywhere



Future Trends in Offshore Engineering

- ▲ Companies that can stay close to the local customer and market,
- ▲ And that can manage offshore activities using good:
 - Personal communication (phone, email, video conferencing)
 - Process control to capture best practices (HWPM)
 - Data and report control (HWDM)
 - Personal relationships
- ▲ Will be able to grow globally (including the United States)
- ▲ India can and does offshore to the United States



Future Trends in Offshore Engineering

- ▲ Altair Engineering routinely off-shores between the US (MI, WI and CA), India, China, Italy, Germany, and the UK.
- ▲ Offices are growing (9 months):
 - India: 20 → 50.
 - China 5 → 10
 - Germany 25 → 28
 - United States 50 → 52
- ▲ Many competitors in the US have declined or have gone out of business



How does Industry and Academia Adapt?

▲ Industry

- Customer relationships are must remain local
- Process control must be applied to engineering projects
- Centers of excellence must be established
- Process and CAE data management systems must used
- Company must be one family

▲ Academia

- More focus on project management
- More focus on customer management (sales, support, and reporting)