Developing Robust Growth Strategies

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Agenda

- Strategic Approach to Growth
- Where is the Growth in the Market?
  - Geographic Trends
  - Sector “Profit Pools”
- Aligning Strategic Choices: The Key to Growing Profitably
The Growth Imperative for E&C Companies

Growth is critical to maintaining long term competitiveness

- Why E&C companies grow?
  - Retaining top talent
  - Threat of existing & new competitors
  - Innovation
  - Leverage existing customer base
  - Ambition of board and executives
  - Pricing pressures
  - Diversification
  - Attractive new markets
  - Enhanced scalability
Why is growth difficult?

Common mistakes

- Grow for reasons not consistent with company vision, values and core competencies
- Inaccurate assumptions on competitor assessments, state of economy, project delivery methods, contractual agreements, legislative process, etc.
- Hidden or under estimated operating costs with negative impact on operating cost and margin compression
- Continuous switch and/or replacement strategy without a long term commitment to establish market presence and relationships
- Vision for expansion not fully supported by executive leadership or internal go to champion with expansion oversight and responsibilities
- Chasing an opportunity and/or customer without long term plans once projects or relationships run their course
- Focus on short term win instead of dedicating time and patience for the company to establish itself in the new market
- Forming an alliance in which the relationship is contingent on a 3rd parties strengths and relationships
- Pull back or reallocate investment funds when other areas of the company require the assistance
- Develop one growth/expansion strategy and assume it will work in all regions, countries, markets, etc.
What is Strategy?
Strategy can best be expressed as an integrated set of choices

What are our goals and aspirations?
- Purpose
- Financial objectives
- Non-financial objectives

Where will we play?
- Sectors & Customers
- Vertical Stages
- Geographies

How will we win in chosen markets?
- Value proposition
- Sources of defensible advantage
- Profit model(s)
- Partnerships

What capabilities must be in place?
- Distinctive capabilities
- Reinforcing activities

What management systems are required?
- Systems
- Structures
- Measures
Characteristics of Good Strategies

The best strategies are coherent, aligned and reinforcing

- The most **robust** strategies are those in which the how to win reinforces the where to play and vice versa

- The most **satisfying** strategies are those in which the where to play and how to win choices have the potential to meet the desired goals and aspirations

- The most **sustainable** strategies are those in which the where to play and how to win choices are buttressed by appropriate, distinct, and reinforcing capabilities, organizational systems and initiative programs
Where is the Growth in the Market: Geographic Trends
Geographic Trends through 2025

Construction is expected to grow faster than GDP, increasing to >13% of GDP globally in 2025

+ A recovery of the construction sector in the United States is led by the housing market where over 20 million new homes will be required by 2025; additionally, non-residential construction remains solid, growing 8% in 2015
+ Growth in Canadian infrastructure and natural resources capacity is expected given deferred projects and past restraints on investment
+ Mining and extractive industries will drive growth in Chile and Colombia
  - Despite the 2014 World Cup and 2016 Olympics, growth in Brazil will be constrained by deferred economic and fiscal reforms

+ The Chinese construction market is expected to be twice the size of that in the US by 2025
+ Indonesia, Vietnam, and the Philippines have become more competitive with China and are expected to see substantial construction sector growth
  - The construction boon caused by the Japan earthquake and economic stimulus will wane; declining population will contribute to flat construction growth
  - In Australia, recent investment in mining and natural resources will wane as assets move from construction to production phase

+ Strong population growth and urbanization in Sub-Saharan Africa will drive investments in infrastructure, housing, medical, and educational facilities
+ Qatar is expected to have the fastest growth rate through 2020, of over 10% p.a., benefiting from economic diversification and the 2022 FIFA World Cup
+ Turkey is expected to experience strong growth due to its relatively stronger economic fundamentals in the region and growing urban population
  - Western European construction market expected to be smaller in 2025; a shrinking population exacerbates economic/fiscal problems

Source: Global Construction 2025, Global Construction Perspectives and Oxford Economics; Top Industry Trends to Watch in 2015, GE Capital
Note: Flags shown above reflect a representative sample of countries with key trends noted
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Geographic Trends through 2025 (cont.)

Growth markets in engineering and construction are driven by demographics, economic / fiscal conditions, and investments in resource extraction.

North America
- U.S. to remain 2nd Largest Construction market
- 75% increase in U.S. const. volume by 2025
- >3% p.a. in Canada from infrastructure / resources
- Strength in Mexico due to trade / unit labor costs

South America
- Population already highly urbanized
- Brazil growth to be average at 2% p.a.; economic reform needed
- Expansion of mining in Chile and resource extraction in Colombia drives >4% p.a. growth

Europe
- Western Europe const. market expected to be 5% smaller by 2025
- Declining wages and employment levels
- Ongoing fiscal / econ. issues

Asia
- Demographics drive growth in China, India
- Japan’s growth wanes post stimulus
- “Asian Tigers” benefit from labor cost advantage and trade

Africa
- Urban pop. of Sub-Saharan Africa to grow 70%; total pop. growth >40%
- Associated infrastructure, housing, other requirements
- Highest growth in Nigeria

Australia
- Investments in resource extraction move from capacity building to production
- Growth rate slows to <2% p.a.

Legend
(though 2025)
- High growth
- Low growth
- Declining

Source: Global Construction 2025, Global Construction Perspectives and Oxford Economics
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Global Trends

Global trends are driving growth in demand for engineering services and construction across regions

The engineering and construction industry continues to globalize, with changes in how work is sourced, delivered, and supported, including:

- Expansion into new global markets is led by opportunities from shifting consumer demands and new funding mechanisms
- Consolidation of the world’s leading consulting engineering firms has enabled those firms to win contracts in global markets, including broad-scope projects that require engineers, contractors, and suppliers from multiple countries
- However, increasing pressure is placed on international corporations by local firms that are more cost competitive and may adopt different contracting models

Emerging markets will drive a substantial portion of industry growth through 2025 and will account for over 60% of global construction activity (compared to 35% in 2005)

- Emerging Asia is the fastest growing region for E&C
- Affordable housing in emerging markets is a significant opportunity for E&C companies as 270 million new homes will be required in China and India alone by 2025
- Expanding urban populations and growing middle class, especially in emerging markets, increases energy demand and engineering projects related to energy

Innovation in project delivery will be required to address changing requirements and expectations of the global E&C marketplace

- Firms are using more of the design-build delivery system to minimize risks & reduce delivery schedules by overlapping design & construction phases of the project
- Firms are reducing the use of subcontractors and are bringing more work in house to increase profits – allowing for greater control & higher margins
- Increasing globalization enables outsourcing of services to offshore service providers, such as low-cost engineering centers

Source: Global Construction 2025, Global Construction Perspectives and Oxford Economics; Global Engineering Services April 2015, IBIS World; Top Industry Trends to Watch in 2015, GE Capital
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Where is the Growth in the Market: Sector “Profit Pools”
US E&C Revenue, Profit, and Employment

U.S. E&C profitability has been recovering more quickly than revenue and employment.

Source: IBIS World; Monitor Deloitte Analysis.
However, profit margin recovery has not been even across industry subsectors

Source: IBIS World; Monitor Deloitte Analysis.
Subsector Share of Revenue vs. Share of EBITDA

While Buildings Construction Contracting accounts for >20% of industry revenue, it represents closer to 12% of industry profit due to lower margins
Shifts in Share of Industry Profit

Differences in pace of recovery and profitability have shifted share of profit away from Buildings towards Infrastructure and Engineering.

Engineering and Construction Industry Share of Profit by Sector

**2006 EBITDA**
- Infrastructure: 8.0%
- Buildings: 18.0%
- Excavation: 5.5%
- Core: 21.8%
- MEP: 13.5%
- Engineering: 15.9%
- Road, Highway & Bridge: 9.3%

**2014 EBITDA**
- Infrastructure: 13.2%
- Buildings: 11.9%
- Excavation: 6.0%
- Core: 18.3%
- MEP: 18.5%
- Engineering: 18.5%
- Road, Highway & Bridge: 9.1%

Source: IBIS World; Monitor Deloitte Analysis.
If current trends continue, profit pools will continue to shift towards more complex projects and the services that support them.
U.S. Industry Concentration by Subsector

Size, growth, profitability, and competitive intensity all impact market attractiveness, and should inform Where to Play choices

E&C Sector Revenue from Top 5 Companies in Sector vs. All Other Companies in Sector

Source: IBIS World; Monitor Deloitte Analysis.
Aligning Strategic Choices: The Key to Growing Profitably
Aligning Goals & Aspirations with Where to Play

Up front market analysis ensures that target markets are sufficiently attractive to support growth ambitions

Key Business Questions

- Do our target markets have sufficient size, growth, and profitability to allow us to meet our financial objectives?
- Does the intensity of competition allow us to meet our market position and share objectives?
Aligning Where to Play and How to Win

What it takes to win projects and make money varies by target markets – generating insight into market-specific dynamics is critical.

Key Business Questions

- What are the “table stakes” for competing in the target market?
- What drives sustainable differentiation in the target market?
Table Stakes vs. Differentiation

The ability to win initial projects in a new market is not enough to ensure the ability to grow profitably and sustainably in that market.

<table>
<thead>
<tr>
<th>Table Stakes Factors</th>
<th>Entering New Subsector</th>
<th>Entering New Geography</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Relevant delivery method experience</td>
<td>• Baseline local relationships (government, owner, trade)</td>
<td></td>
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<tr>
<td>• Relevant project type experience</td>
<td>• Knowledge of local business and building environment</td>
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<table>
<thead>
<tr>
<th>Sources of Sustainable Differentiation</th>
<th>Entering New Subsector</th>
<th>Entering New Geography</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Differentiated access to data (e.g., relevant cost databases)</td>
<td>• Differentiated access to local talent</td>
<td></td>
</tr>
<tr>
<td>• Differentiated technology and tools (e.g., collaboration, virtual design &amp; construction)</td>
<td>• Differentiated local relationships / partnerships</td>
<td></td>
</tr>
</tbody>
</table>
Developing the Required Capabilities

Clarity on “How to Win” will drive focus on the necessary investments in capabilities

Key Business Questions

- How significant are our capability gaps to deliver against “How to Win”?
- What is the best way to close those gaps (e.g., buy vs build vs. partner)?
- How much will we have to invest? How long will it take to break even?

**How will we win in chosen markets?**

- **Value proposition**
- **Sources of defensible advantage**
- **Profit model(s)**
- **Partnerships**

**What capabilities must be in place?**

- **Distinctive capabilities**
- **Reinforcing activities**
Build vs. Buy
Considerations around timing, risk, control, and requirements, are key drivers of the build versus buy decision across sectors.

### Build

**Pros**
- Controlled vision and strategy
- Controlled risk management
- Greater ability to design organization and manage talent
- Greater ability to manage brand identity

**Cons**
- Longer time to payback / slower growth
- Lack of scale in new market
- Unclear signaling on commitment to new market
- Risk of pitfalls due to lack of market insight

### Buy

**Pros**
- Faster time to payback
- Immediate scale in new market
- Access to new capabilities
- Access to insight and experience in new market
- Clear signal to market

**Cons**
- Higher up front investment
- M&A risk (e.g., loss of talent, culture clash, systems clash)
- Integration challenges / distraction to operations
- Cost of complexity
Establishing the Optimal Management Systems

Disciplined, balanced management is as important as strategic planning to ensure long term sustainability and profitability of growth efforts.

Key Business Questions

- What is the right balance of local market responsiveness vs. central oversight in decision making authority?
- What is the right balance between leveraging enterprise synergies vs. customizing systems to new market requirements?
- How will we measure, monitor, and manage progress?
Getting Started
Getting Started

**Identify Potential Areas of Opportunity**
- Scan potential markets and assess attractiveness (size, growth, profitability, intensity of competition)
- Prioritize most promising markets for in-depth analysis

**Understand What it Takes to Win**
- Conduct market-specific research to understand what it takes to win and to make money
- Select target markets based on attractiveness and ability to win

**Develop Execution Plan**
- Articulate value proposition and sources of sustainable advantage for target markets
- Determine required capabilities and plan for closing gaps
Speaker contact information

Strategy

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Yakir focuses on commercial strategy and commercial capability building and previously served as EVP Strategic Planning and a member of the Executive Committee at Suffolk Construction.

Business Model Transformation

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Senior Manager
Costa Mesa, CA

John focuses on customer experience and business development strategy. John has previously served as VP of Strategy and Business Development for a national electrical and communications contractor.
Conference Resources

A copy of this presentation may be downloaded from the conference website.

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www2.deloitte.com/us/2015ECCConference

You may also access all presentations and thoughtware through our conference app
Appendix
## Industry Sectors (1 of 6)

<table>
<thead>
<tr>
<th>Industry Sector Grouping</th>
<th>IBIS Industry Sector</th>
<th>Industry Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Design</strong></td>
<td>54131 - Architects</td>
<td>Architects plan and design residential, institutional, leisure, commercial and industrial buildings and structures by applying their knowledge of design, construction procedures, zoning regulations, building codes and building materials.</td>
</tr>
<tr>
<td></td>
<td>54133 - Engineering Services</td>
<td>Industry establishments apply the physical laws and principles of engineering in designing, developing and using machines, materials, instruments, structures, processes and systems. These services may involve providing advice, preparing feasibility studies, preparing plans and designs, providing technical services during the construction or installation phase, inspecting and evaluating engineering projects and providing other related services.</td>
</tr>
<tr>
<td><strong>Engineering</strong></td>
<td>54136 - Geophysical Services*</td>
<td>Operators in this industry gather, interpret, and map geophysical data. Companies often specialize in locating and measuring the extent of subsurface resources, such as oil, gas, and minerals, but may also conduct surveys for engineering purposes. Companies also use a variety of surveying techniques depending on the purpose of the survey, including magnetic, gravity, seismic, or electrical and electromagnetic surveys.</td>
</tr>
<tr>
<td></td>
<td>54162 - Environmental Consulting</td>
<td>This industry provides advice to businesses and federal governments on environmental issues, such as controlling environmental contamination from pollutants, toxic substances and hazardous materials. Environmental consultants identify problems, measure and evaluate risks and recommend solutions. The industry employs a multidisciplined staff of scientists, engineers and other technicians.</td>
</tr>
<tr>
<td><strong>Buildings</strong></td>
<td>23611b - Apartment &amp; Condominium Construction</td>
<td>This industry is composed of general contractors responsible for constructing new multifamily residential units, including high-rise apartments, townhouses, condominiums and medium-to-high density units (i.e. units not separated by a ground-to-roof wall). All of the complexes may be constructed for sale as condominiums or cooperatives, or used as rental apartments. This industry does not include speculative builders or contractors who build on their own account for sale.</td>
</tr>
</tbody>
</table>

*IBIS provides industry actuals for this industry through 2013, and estimates for 2014*
### Industry Sectors (2 of 6)

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<th>Industry Sector Grouping</th>
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<tr>
<td>Buildings</td>
<td>23621 - Industrial Building Construction</td>
<td>The industry is composed of contractors that are primarily responsible for the construction (e.g. new work, additions, alterations, maintenance and repairs) of industrial and manufacturing buildings. Establishments include general contractors, design-build companies and construction management operators.</td>
</tr>
<tr>
<td></td>
<td>23622a - Commercial Building Construction</td>
<td>This industry includes companies that are primarily responsible for work on the construction (i.e. new work, additions, alterations, maintenance and repairs) of office, retail, hotel, agricultural and entertainment buildings. Participants are general contractors or project managers. This industry excludes institutional buildings (e.g. hospitals and schools), heavy industrial buildings (e.g. factories and power plants) or infrastructure (e.g. communications towers or oil pipelines).</td>
</tr>
<tr>
<td></td>
<td>23622b - Municipal Building Construction</td>
<td>This industry comprises contractors that are responsible for the complete construction (i.e. new work, alterations and repairs) of institutional buildings, such as schools, hospitals, churches, civic centers and prisons. The industry also includes operators that perform construction management on institutional building projects. Types of operators include general contractors, design builders, engineer-constructors, joint-venture contractors and turnkey contractors.</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>23711 - Water &amp; Sewer Line Construction</td>
<td>This industry comprises contractors that are responsible for the construction (i.e. new work, reconstruction and repairs) of water mains, sewers, drains, aqueducts, pumping stations, treatment plants and storage tanks. It also includes construction management companies and special trade contractors that are involved in water and sewer line construction. All structures that are integral parts of water and sewer networks are included in this industry.</td>
</tr>
<tr>
<td></td>
<td>23712 - Oil &amp; Gas Pipeline Construction</td>
<td>This industry comprises contractors that are responsible for the construction of gas and oil pipelines, mains, pumping stations, refineries and storage tanks. It also includes construction management companies and special trade contractors that are primarily involved in oil and pipeline construction.</td>
</tr>
</tbody>
</table>

*IBIS provides industry actuals for this industry through 2013, and estimates for 2014*
## Industry Sectors (3 of 6)

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<tr>
<td><strong>Infrastructure</strong></td>
<td></td>
<td>Operators in this industry provide construction, repair, rehabilitation and maintenance work for a variety of forms of electric power and telecommunications infrastructure, including power lines, power plants, radio and television towers and cable infrastructure. Industry operators however, do not perform construction work on hydroelectric power station, the construction of broadcast studios or electrical maintenance work within buildings.</td>
</tr>
<tr>
<td>23713 - Transmission Line Construction</td>
<td></td>
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<tr>
<td>23799 - Heavy Engineering Construction</td>
<td></td>
<td>Operators in this industry are primarily engaged in heavy and engineering construction projects, with the exception of highway, street and bridge construction. Work performed includes new work, reconstruction, rehabilitation and repairs. The industry also includes specialty trade contractors, if they are primarily active in activities related to engineering construction projects. Construction projects include water resources, development of marine facilities and open space improvement.</td>
</tr>
<tr>
<td><strong>Road, Highway, and Bridge</strong></td>
<td></td>
<td>Companies in this industry construct new highways, streets, roads and airport runways (excluding elevated roadways). The industry also includes highway and street construction management operators and special-trade contractors that perform subcontracting work on projects (e.g. grading, laying pavement, installing guardrails and public sidewalks). Establishments may subcontract some or all of the actual construction work.</td>
</tr>
<tr>
<td>23731a - Road &amp; Highway Construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23731b - Bridge &amp; Elevated Highway Construction</td>
<td></td>
<td>This industry comprises companies that primarily engage in the construction of bridges and elevated highways. Types of projects include new work, reconstruction and repairs. This industry does not include road and highway construction activity.</td>
</tr>
<tr>
<td>23899a - Paving Contractors</td>
<td></td>
<td>This industry is composed of establishments that specialize in the paving of residential and commercial driveways and parking areas. Establishments in this industry typically use asphalt, concrete or brick when performing their paving services.</td>
</tr>
</tbody>
</table>

*IBIS provides industry actuals for this industry through 2013, and estimates for 2014*
## Industry Sectors (4 of 6)

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<tbody>
<tr>
<td>Core</td>
<td>23811 - Concrete Contractors</td>
<td>Operators in this industry are primarily engaged in pouring, building and finishing concrete foundations and structural elements, such as retaining walls and private driveways and walks. Industry operators also perform grout and shotcrete work. The labor performed may include new work, additions, alterations, maintenance and repairs.</td>
</tr>
<tr>
<td>Core</td>
<td>23812 - Steel Framing</td>
<td>This industry comprises contractors that install steel and precast concrete to produce structural elements, building exteriors and elevator fronts. The industry also includes the installation of other steel products (e.g. setting rods, bars, rebar, mesh and cages) to reinforce poured-in-place concrete, cooling towers and metal storage tanks. The structural steel erection work performed includes new work, additions, alterations, reconstruction, maintenance and repairs.</td>
</tr>
<tr>
<td>Core</td>
<td>23813 - Wood Framing*</td>
<td>This industry comprises establishments engaged in platform and balloon framing, fastenings, foundation laying, truss-framed and plank and beam construction, using wood-based products. Contracted work typically includes new construction, alterations, maintenance and repairs and additions. This industry excludes finish carpentry and framing using steel, precast concrete or non-wood products.</td>
</tr>
<tr>
<td></td>
<td>23814 – Masonry*</td>
<td>The Masonry industry provides services such as stone setting, bricklaying, brick-to-glass block laying and exterior marble, granite and slate work. Industry activities also include additions, alterations, maintenance, repairs and new construction. This industry excludes businesses that pour, build and finish concrete foundations and structural elements (see IBISWorld report 23811).</td>
</tr>
<tr>
<td></td>
<td>23815 - Glass &amp; Glazing Contractors</td>
<td>Companies in this industry select, cut and install glass panels for large windows, glass doors, skylights, curtain walls and sunroom additions in all types of buildings; they also install window panes. The glasswork performed includes new work, additions, alterations, maintenance and repairs. This industry does not install, tint or repair automotive glass and it does not install prefabricated window units.</td>
</tr>
</tbody>
</table>

*IBIS provides industry actuals for this industry through 2013, and estimates for 2014
## Industry Sectors (5 of 6)

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<tr>
<td>Core</td>
<td>23816 - Roofing Contractors</td>
<td>Industry operators install roofing, siding, sheet metal and roof drainage systems, such as downspouts and gutters. Activities also include treating roofs (e.g. spraying, painting or coating), coppersmithing, tinsmithing, installing skylights, installing metal ceilings, flashing, ductwork and capping. Work performed includes new work, additions, alterations, maintenance and repairs.</td>
</tr>
<tr>
<td>Core</td>
<td>23829 - Elevator Installation &amp; Service*</td>
<td>This industry comprises establishments primarily engaged in one or more of the following activities: the installation or dismantling of building or industrial equipment (except plumbing, air conditioning or electrical equipment); machine rigging; and millwrighting. Types of equipment installed include automated and revolving doors, conveyor systems, dumbwaiters, dust-collecting equipment, elevators, small incinerators, pneumatic tube systems and built-in vacuum-cleaning systems.</td>
</tr>
<tr>
<td>Core</td>
<td>23831 - Drywall &amp; Insulation Installers*</td>
<td>Companies in this industry primarily engage in drywall, plasterwork and building insulation work. Plasterwork involves applying plain or ornamental plaster as well as installing lath. Industry operators are contracted for work on new buildings, additions, alterations, maintenance and repairs.</td>
</tr>
<tr>
<td>Core</td>
<td>23832 - Painters</td>
<td>This industry includes establishments primarily engaged in interior or exterior painting, as well as interior wall covering. The painting and wall-covering work performed includes new work, additions, alterations, maintenance and repairs. Establishments in this industry perform activities ranging from bridge and ship painting to paint and wall-covering removal.</td>
</tr>
<tr>
<td>Core</td>
<td>23833 - Flooring Installers</td>
<td>Contractors in this industry primarily install resilient flooring, carpeting, linoleum and wood or other alternatives, and prepare surfaces for the installation of flooring and floor coverings. Industry activity includes new work, additions, alterations, maintenance and repairs. This industry does not include the installation of concrete flooring (IBISWorld report 23811) or the installation of stone or ceramic floor tile (IBISWorld report 23834).</td>
</tr>
<tr>
<td>Core</td>
<td>23834 - Tile Installers*</td>
<td>Operators in this industry set and install tile products (except for exterior stone and resilient tiles), such as ceramic, interior stone and mosaic tiles. Additionally, operators install marble particles mixed with cement to make terrazzo tiles. Installation includes new installations, additions, alterations, maintenance and repairs.</td>
</tr>
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*IBIS provides industry actuals for this industry through 2013, and estimates for 2014.*
## Industry Sectors (6 of 6)

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<tr>
<td>Core</td>
<td>23835 – Carpenters*</td>
<td>This industry comprises establishments primarily engaged in framing, carpentry and finishing work. The carpentry work performed includes new work, additions, alterations, maintenance and repairs. Activities performed by establishments in this industry range from the installation of doors and windows to paneling, steel framing work and ship joinery.</td>
</tr>
<tr>
<td></td>
<td>23891b - Demolition &amp; Wrecking*</td>
<td>Operators in this industry primarily wreck and demolish buildings and structures and sometimes sell salvaged materials. Other industry services include the clearing and recycling of debris, interior strip outs, handling of asbestos and hazardous materials, site remediation (decontamination and waste disposal), concrete cutting and explosive demolition. Excavation and land clearing work is excluded from this industry.</td>
</tr>
<tr>
<td>Mechanical, Electrical, and Plumbing (MEP)</td>
<td>23821 - Electricians</td>
<td>This industry performs electrical work at a site (e.g. installing wiring), services electrical equipment at a site and sells and installs electrical equipment. The electrical work performed includes new work, additions, alterations, maintenance and repairs.</td>
</tr>
<tr>
<td></td>
<td>23822a - Heating &amp; Air-Conditioning Contractors</td>
<td>This industry comprises companies that primarily install and service heating, ventilation, air-conditioning (HVAC) and refrigeration equipment. Operators perform tasks that include new installations, additions, alterations, maintenance and repairs. Plumbing and related activities are not included in this report (IBISWorld report 23822b).</td>
</tr>
<tr>
<td></td>
<td>23822b - Plumbers</td>
<td>Industry contractors install and maintain plumbing fixtures, fittings and equipment. Industry activities include work on household pipes and drains, installation of gas cooking and heating appliances and work on bathroom and toilet fixtures and venting systems. Emergency repair work (e.g. unclogging drains or repairing burst water mains) represents a significant source of industry revenue. Contractors may also supply plumbing appliances and coupling products for construction projects.</td>
</tr>
<tr>
<td>Excavation</td>
<td>23891a - Excavation Contractors*</td>
<td>This industry primarily excavates land for building construction. Activities include drilling shafts, foundation digging and drilling and grading. The excavation work performed includes new work, additions, alterations and repairs.</td>
</tr>
</tbody>
</table>

*IBIS provides industry actuals for this industry through 2013, and estimates for 2014*
## Analysis Approach / Rationale

<table>
<thead>
<tr>
<th>Topic</th>
<th>Slide(s)</th>
<th>Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBITDA Calculation</td>
<td>Throughout</td>
<td>IBIS provides US only revenues at the industry level. While IBIS does not provide EBITDA, it does provide a metric called IVA (Industry Value Added). IVA is defined as the industry’s contribution to GDP, or profit plus wages and depreciation. IBIS also provides industry wages. Hence we reduced industry wages from IVA to arrive at a proxy for EBITDA.</td>
</tr>
<tr>
<td>2014 Actuals</td>
<td>Throughout</td>
<td>The Engineering and Construction industry data from IBIS was compiled from 32 NAICS industries. IBIS includes 2014 actuals for 23 of these 32 industries. Where 2014 actuals were not available, we used the 2014 estimates provided by IBIS. The industries with estimated 2014 actuals are noted in appendix slides 12-17.</td>
</tr>
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| Market Share by Company     | Slides 3 and 4        | IBIS provides market share for leading companies within each NAICS sector. To determine revenue for a particular company within a sector, we multiplied the market share by the total revenue in the industry. IBIS provided us with a description of how they calculate the industry-relevant, US-only market share for companies:  

> “Company financials are sourced from SEC filings (for public companies), company annual reports, company websites, trade associations, industry magazines or journals, news articles and other sources, such as Dow Jones, Fortune and Forbes. Analysts also contact industry companies to gather any relevant information that a company is willing to disclose. Financial information about private companies is sourced in a similar way, minus the SEC filings, of course. Industry-relevant revenue represents revenue relevant to the NAICS code or industry definition in question. This figure may be total/consolidated company revenue or a very small segment of a company’s overall operations. Analysts look at a company’s products, services and business segments that are applicable to the industry; this includes the geographic breakdown of industry operations so that only US operations are counted in US industry reports. Sometimes, companies disclose their market share of particular industries, thereby giving analysts a rough estimate of industry-relevant revenue. Estimates are adjusted based on data found through news articles, business journals and/or relevant associations. Market share is calculated by taking a company’s projected industry-relevant domestic revenue over projected total industry revenue for the current report year.”
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