

Session 11:

Global Planning and Project Delivery

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Session 11:

Global Planning and Project Delivery

Today's session will deal with global strategic planning and three closely related issues: alternate project delivery systems, concessions, and establishing foreign operations and offices.

1. **Alternate Delivery Systems**

A number of your other courses have dealt quite well with both traditional and newer project delivery systems. In this session we will focus on the application and opportunities of introducing these systems in the international arena, with the caveat that a number of the systems such as design/build and BOT (build/own/transfer) were actually initially developed outside of the U.S.

A good deal has been written about "delivery systems" - the way we "deliver" or undertake a project or provide a service - and much of it in response to the new global wave of privatization and concessions. But, remember, privatization and concessions are not delivery systems. Most project delivery systems can be used for public, private and hybrid projects, although some typically are better suited and more frequently adopted by the public sector, while others more often are used by the private sector.

a. The AEC Project Cycle

International and domestic AEC projects can, according to Charles Thomsen, the former President of 3DI and an outstanding expert in the field, be divided into three distinct phases - Definition, Design and Construction. These phases (and their sub-phases) can overlap, be subdivided or regrouped, but none can be eliminated and if one phase is poorly executed, the subsequent phases may be impaired.

All delivery systems cover some planning, as well as the design and construction phases, while some may go beyond and also include finance, commissioning, ownership, leasing or outsourcing, maintenance and operation.

Planning includes:

- Discovery: The identification, analysis and definition of project requirements and constraints, including potential "fatal flaws" and establishment of priorities.

- Integration: Establishment of probable project scale, parameters, possible variations and the implementation plan or plans (including initial estimates of costs and schedule).
- Evaluation: The economic, financial, technical, legal and environmental reviews and analysis, including optimal timing (staging), network or linkage impact if any, sizing and appropriate scale and selection of the most attractive alternate(s).
- Preconstruction Activities: Legal, financial, site acquisition, permitting, public outreach, etc.

Design was divided into four phases by Thomsen (remember he is an architect) including:

- Schematic Design: The basic concept, plan and design criteria and parameters.
- Design Development: An evolution of design that defines the functional and aesthetic aspects of the project and, equally important, the building systems that best satisfy them.
- Construction Drawings and Specifications: The details of project assembly and construction.
- Construction Costs, Estimates and Constructability/Value Engineering Analysis: The project cost estimates and assessments of the practicality of the designs.

Construction typically is divided into at least six activities:

- Contractor Selection: Preparation of tender documents; and/or evaluation and prequalification of bidders; evaluation of offers; negotiation; and award of contracts to construct the project.
- Procurement: Purchase of components, equipment and off-site assemblies.
- Shop Drawings: The final fabrication drawings for construction components and systems.
- Fabrication, Delivery and Assembly which includes:
 - Site Construction: The labor-intensive field construction which one typically associates with construction, installation of components, systems and equipment and provision of

construction management or supervision, QA/QC, environmental monitoring and site safety procedures.

- Warranties, Guarantees, Commissioning and Project Closeouts – Increasingly critical components especially in modern mega-projects, often including certification, start-up and commissioning. This phase may also include an extended testing operations/maintenance or turnkey period.

b. Delivery Systems

Early in the project cycle, an owner must select an appropriate project delivery system for design, construction and increasingly, commissioning, maintenance and operation. A client typically has a number of available options. In addition to the traditional design/bid/build process, a client can select design/build, fast-track, multiple primes or a variety of hybrids. Alternate pricing includes Guaranteed Maximum Price (GMP), cost-plus, target-price and fixed-price. Each of these has advantages and disadvantages and the best choice is governed by the specific requirements, complexity and urgency of the project and the owner/client's technical knowledge and available managerial resources.

There are today a growing number of systems and procedures available to deliver these services including:

- Traditional Planning/Design/Bid/Build: This is still the most appropriate for repetitive, recurrent commodity types of construction such as roads, earth-moving warehouses and the like, as well as most public buildings and medium-sized projects.
- Fast-Track: A system in which some of the design, procurement and construction phases are executed in parallel--but in contrast to design/build, independently--to reduce total delivery time. This is often used to expedite construction or where investors/owners anticipate a quick return, e.g., during a real estate boom, at an Olympic site, or where high-value, short life-cycle products such as computer chips (Intel), require specialized facilities which are often only a small percentage of total product costs.
- Multiple Primes: A variation of either design/bid/build or design/build where an owner divides the project or program into discrete subprojects and selects contractors to independently and often simultaneously construct these. The system can reduce costs and the risk of reliance on a single contractor by bidding smaller packages but requires a highly knowledgeable and skilled owner or program manager to coordinate and supervise the activities of a

number of primes and avoid job site and scheduling conflicts and confusion. Multiple primes are widely used by the U.S. Department of Defense, state transportation agencies and airport authorities including Massport in the United States.

- Design/Build: Already predominant in Europe and many parts of Asia, it eliminates the separate responsibilities for the designer and the contractor, since the designer is a partner, a subcontractor or an employee of the contractor.
- Turnkey: “Turnkey,” often called EPC, is really design/build plus operation start-up to ensure the provision of a properly working facility. In widespread use in the chemical, petrochemical, and power sectors where long lead time equipment procurement is often a critical component of construction, it has recently expanded to water and sewage treatment works, and specialized buildings such as laboratories, manufacturing plants, prisons and hospitals.
- Build/Operate/Transfer (BOT): This system similar to turnkey, couples design/build with an operating period. In recent years, it has been adopted, often together with independent project financing (structural financing), for complex infrastructure such as mass transit, airports, pipelines and power.
- Super Turnkey: A recent variation of turnkey construction where a company designs and constructs a facility to meet often demanding performance specifications and/or parameters defined by the client and initially operates the facility under contract. Super turnkey development places increased technical and financial risk on the contractor and typically requires additional expertise often accompanied by proprietary technology.
- Build/Transfer/Operate (BTO): A private developer finances and builds a facility and, upon completion, transfers legal ownership to the sponsoring government agency. The owner then leases the facility back to the developer under a long-term lease, during which the developer operates the facility and has the opportunity to recover the investment and a reasonable profit. This arrangement is similar to the BOT model described above, but can avoid some of the legal, regulatory, and tort liability issues that can arise from private ownership and, in the U.S., Israel and a number of other countries, offers favorable tax treatment (tax free bond finance). The California Department of Transportation employed the BTO model in its partnerships with private toll road operators.

- Build/Own/Operate/Transfer (BOOT): In effect, a concession that at the completion of the concession period, is “returned” to the original owner, either at an agreed-upon price, or as payment for the concession.
- Design/Build/Operate/Maintain (DBOM): A variation of BOOT, designed to take advantage of governments’ (especially in the U.S.) access to lower cost or “tax free” funding, but is also increasingly popular as a legal way to “lease” government-owned/government-built facilities to a concessionaire for a fixed time period.
- Wraparound Addition: A private developer finances and constructs an addition at an existing public facility. The private developer then operates both the existing facility and the addition for either a set period of time, or until the developer recovers costs plus a reasonable return on investment. The SR91 highway project in California in which private toll lanes were added to a congested freeway, and many bridge dualizations in the UK are examples of the wraparound addition model.
- Lease/Develop/Operate (LDO): A developer is given a long-term lease to operate and expand an existing facility. The developer agrees to invest in facility improvements, and can recover the investment plus a reasonable return over the term of the lease under the lease/develop/operate model. Johnson Controls has operated Teterboro Airport in New Jersey under an LDO, and many ferry and rail terminals with attractive real estate sites, lend themselves to LDOs.
- Build/Own/Operate (BOO): The classic concession where a private developer finances, builds, owns, and operates a facility in perpetuity. The developer/owner may be subject to regulatory constraints on operations, toll and service levels, etc. The long-term right to operate the facility ideally provides the developer with sufficient financial incentive to maintain and improve it.
- Buy/Build/Operate (BBO): An existing facility, often public, is sold or transferred to a new owner who renovates or expands the facility, and then continues to own and operate the facility in perpetuity.
- Operate and Maintain: A company operates a public facility under contract with the sponsoring government or private owner (computer and electronic data processing services, toll collection, water and sewage plant operation, port stevedoring and janitorial services, etc). Operation of a facility under such arrangements, typically termed “outsourcing,” can result, as noted in the VMS program, in improved

service and efficiency and are commonly used by local government to provide municipal services such as solid waste removal.

As you will note, we have identified 15 different project delivery systems. But, there are as many variations as fertile minds of marketers and financiers can conceive. Remember, however, that all are designed to address three critical issues:

- Do you want to separate the design and construction functions?
- Do you want to have a short operations or commissioning period prior to project delivery to ensure the facility is acceptable, and/or
- Do you want to establish extended and/or permanent independent operations?

All of the delivery systems we discussed are variations of answers to the above three questions, modified in order to meet specific concerns, tax codes, industrial or infrastructure practices, or encourage concessions.

c. International Practice

In many countries, the Design/Build approach to project implementations has long been popular. The approach has existed for centuries; for example, the Toryoh (Master Carpenter) of Japan drew his designs on a wooden board and then, based on personal experience, managed and performed the construction work by himself. The master builders of medieval European cathedrals followed similar design/build practices. Yet today, surprisingly, the design/build approach and its many mutations are discussed by some, especially in the U.S., as if it were the newest in engineering and construction concepts, and is often adopted for project implementation without proper understanding of how it should best be used, and when. In the May/June 2003 issue of the *American Council of Engineering Companies, Engineering Inc.*, ACEC reports that FIDIC, the umbrella organization of the world's consulting engineering community, in its First Edition* of "Conditions of Contract for Design/Build/Turnkey" published in 1996 suggested that,

"Under this form of contract, design is the responsibility of the construction organization. This arrangement reduces the problems which may, on occasion, arise from the division of responsibility between designer and construction."

* A subsequent edition was published in September 1999.

But, noted,

“For the most part, however, it would be wrong to categorize design/build as a routine way of doing business. Some owners, engineers and construction companies frequently confess to being unsure when and how to work within the design/build framework.”

But, certainly “customer demand” for this approach clearly exists in the marketplace. In addition to FIDIC, the Engineering Advancement Association of Japan model form international contract for process plant construction published in 1986, has proved sufficiently popular to merit a revision in 1992; also in 1992, the ICE (Institution of Civil Engineers of the U.K.) published for the first time its “Design and Construct Conditions of Contract,” which enjoyed sponsorship by two other U.K. organizations, The Association of Consulting Engineers and the Federation of Civil Engineering Contractors.

As noted, the rise in popularity of design/build and its variants has been attributed to a number of perceived or actual advantages over design/bid/build, including:

- Shorter schedules
- More cost effective solutions
- Single source responsibility
- Fewer disputes or legal problems
- Simplified owner administration

2. International Concessions

As we discussed in earlier sessions, the goal of privatization, typically, is to encourage governments to do what they do best – guide, supervise and regulate private markets to efficiently allocate capital and construct, manage and operate facilities, etc., while conserving and leveraging increasingly scarce public funds. This may take the form of transferring, selling or leasing an existing publicly owned facility or transferring a public authority or right to a private owner to construct or improve, maintain, and operate it for a pre-agreed period of time. Examples abound such as Aerolineas de Argentina; rail systems in Argentina, Great Britain, the U.S. and Japan; airports and terminals (JFK, Lima, Santiago, Buenos Aires, Phnom Penh, Ankara, etc.); as well as solid waste collection; highways; telephone, power and water delivery worldwide.

Another form of "privatization" relates to outsourcing arrangements such as Virginia Maintenance Services (VMS) which we reviewed in the Session 9 notes, where the "public sector" enables a private group through legislation, permitting or other means to provide services that had been traditionally deemed the prerogative of the public entity, or the government (e.g., highway maintenance outsourcing in Virginia, Texas, Massachusetts, Florida, Oklahoma; airline terminals in New York, Boston, Indianapolis, Pittsburgh; and water systems management in Indianapolis, Manila, Buenos Aires, etc.).

None of these are recent phenomena. Historic examples include the Suez Canal, the initial Panama Canal investors, the transcontinental railways and canals in the U.S., foreign-owned rail systems in Turkey, Iran, Argentina, and telecom and power facilities throughout the world.

But, such programs must overcome a number of challenges, especially in developing countries. These include:

- Inadequate Profit Returns: Some concessions can generate sufficient income once the projects are complete and are bankable by themselves. Examples include bridges, airports, power plants, railroad and transit lines in densely populated areas such as Hong Kong, which generate sufficient income by collecting fees, tolls and/or fares, and renting, leasing and/or selling sites or properties. Because of the high demand when accompanied by attractive tolls or off-take agreements, such projects can be funded by "project or structural" finance often without other guarantees.

But, to achieve adequate rates of return for investments that can't generate sufficient profit, investors often need to seek additional compensation such as subsidies in the form of land grants, cash contributions, guaranteed off-takes, etc., from the host countries central or local governments to cover so-called "ramp-up" deficits.

- Toll-Tariff Rate Adjustments: To avoid the problem of inadequate toll rates or tariffs, investors should ensure flexible and adjustable toll-rate or off-take plans. But, as noted, tariff and off-take levels and periodic revisions are often politically sensitive.
- Currency Convertibility: Basically, investments made by foreign investors in developing countries, often encouraged by the host country government to reduce both domestic capital requirements and foreign currency shortfalls, are foreign loans. But, since the revenue streams produced by these investments are typically in local currencies (aviation, pipeline, ports and some telecom, may be exceptions), while the investments made by the foreign investors are

usually in a foreign currency, currency conversion is essential for loan service and capital and profit repatriation.

- Currency Depreciation: For international investors, inflation beyond the need to adjust tolls, presents a myriad of concerns and risks, including:
 - The risk that internal inflation may not move in tandem with currency devaluations.
 - The tendency to block or restrict currency conversion during periods of rapid inflation, constraining vendor and loan repayments, licensing, royalties and profit repatriation, etc.
- Lack of Full Operational Rights: Many host country central or local governments are reluctant to transfer full operational rights to foreign investors. Fears of foreign control, of losing a “national” patrimony (e.g., flag carrier airlines, telecom), creating private monopolies, a return to colonialism, and the fact that foreign companies involved in infrastructure projects in third world countries have, traditionally, been viewed as playing supporting roles, make many developing nation governments cautious in transferring full operational rights to private companies.
- Lack of an Adequate Regulatory Framework: Some nation’s tendering and negotiating periods for a BOT or concession scheme are unnecessarily long, demanding and costly. Investors may have to deal with a number of different investors and authorities, go through complex negotiations and risk becoming political pawns. In a developing country, a project financed and constructed by foreign investors can easily become hostage to domestic political struggles. ENRON’s 2,450 MW Dabhol Power Project in India is an excellent example. This project, which we discussed in Session 9, became a “cause celeb” in the international engineering and investment communities.
- Sharing Risks and Cost: All too often, government officials underestimate the risks and costs associated with concession-type schemes, and are unwilling to take the necessary initiatives to pass laws that facilitate their formation, shorten the approval process, accelerate procurement and importation of materials and equipment needed to build the facilities and once built, quickly address regulatory issues and concerns (Costa Rica).
- Differing Standards and Practices: Standards, specifications, practices and methods used in engineering and construction vary from country

to country and planners, design engineers, architects and constructors tend to interpret designs and contract terms differently.

- Cultural and Social Barriers: Even in a world of growing globalization and at least in the finance and construction fields - an increasingly shared monoculture - cultural and social barriers remain. For example, freedom often is associated by many Anglo-Saxons and Western European nations, with laissez-faire or open societies while, to many others, it means freedom from want (basic human needs), etc. Thus, successful project implementation, as we saw with ENRON, often requires major attitude shifts to accommodate different traditions and expectations.

What is the solution to these barriers? A large part of the solution rests in the hands of the host country. On the other hand, foreign investors and firms attracted by the profit potential of concessions in developing economies need to understand and be sensitive to the cultures of the countries in which they invest, and need to forge alliances with the appropriate companies and institutions in the host country.

3. **Planning**

As we touched on in prior sessions, planning, always an important component of most successful companies becomes increasingly important in trying to fathom and navigate rapidly changing, increasingly complex and financially treacherous global markets. A number of enterprises over the years have achieved significant success in using strategic and tactical planning tools to further corporate objectives. Typically, these enterprises recognize that successful corporate planning is not something you leave to a hired consultant or recruit or appoint a newly minted vice president for planning to do. Rather, it must draw on an understanding of the strengths, weaknesses, capacity, goals and appetite for risk, as discussed in Session 9, of your specific enterprise or organization. All too often, as you will note in the Bechtel reading, strategic planning exercises first look outward at the markets, opportunities and competition when, in fact, it should first look inward at the enterprise.

Here it is also important for ambitious and promising young managers to understand the distinctions so often missed between the terms "Vision Statement," "Strategic Plan" and "Tactical Plan." All too often, companies start with a Vision Statement which defines noble and ambitious goals in terms like "targeted growth in earnings, revenues, markets," and broad statements such as "nothing is more important than our employees," "our employees are our

most valuable resource,” “integrity is the key to our success,” which the company’s historic and future activities often belie.*

a. Strategic Planning

So, I believe, in the global market, a Strategic Plan, not the Vision Statement, must come first and the Strategic Plan must draw initially on the historic performance of the company; an understanding of its past successes and mistakes, and its current strengths and weaknesses, including all warts. Although often painful, the plan must reflect a broad understanding and consensus on such strengths and weaknesses among the major operating entities and divisions rather than prepared solely by the CEO or a CFO’s strategic planning office. This analysis should draw on lessons learned in the past as to what areas the company has been able to succeed in and those that it has repeatedly tripped over. In this regard, a number of current and former companies – Ebasco, Kaiser, Morrison Knudsen, McKesson-Robbins, General Motors are good examples - continually repeat the same errors because of an inability to learn from the past, properly evaluate their strengths and weaknesses, or worse yet, live by company myths that were not based on fact.†

The analysis of strengths and weaknesses should be followed by a careful review of the historic successes of the company, its true returns on equity, e.g., why do companies often claim they require a 15-20% return on investment as a threshold when, in fact, their recent real returns were much more modest, e.g., General Motors, AT+T, Eastman Kodak, Xerox, Time Warner.

This should be followed by an analysis of where the company is likely to go based on current trends. This, then, should be carefully compared with competitors as, all too frequently, companies dream they can outperform their sector (e.g., WorldCom, Sunbeam, Krispy Kreme), usually resulting in serious medium-term problems, following often early, highly heralded successes.

Based on this analysis, a company must establish sound reasons why it can outperform its sector or sectors as a whole. Did it outperform the sector or sectors in the past? Is it the lowest cost provider? Does it possess the most attractive brand? In other words, avoid wishful thinking. Define what in the past has allowed it or a competitor to outperform the sector; what is the sector’s forecast trend line growth and performance over the next planning horizon and what can the company specifically do differently to enhance its current performance.

* Ironically, many such Vision Statements and even Strategic Plans were used in recent investigations of CEOs and companies such as mutual and hedge funds, with damaging results. In cases where the activity itself may not have been illegal at the time, e.g., after-hours trading, a company’s Vision Statement or Strategic Plan, claiming that such activities would not be tolerated, became the basis for prosecution.

† Many current Sony executives believe Sony invented the Trinitron TV, Walkman and video tape when, in fact, they only commercialized these opportunities.

This, then, leads to one of the very critical elements of sound strategic planning and one that takes great courage and is accompanied by considerable risk. Should an enterprise continue following its trend line and sector, fine-tuning and trying to better position itself vis-a-vis its competitors, e.g., the Toyota model of declining costs, better design, quality and/or service, etc., or should it transit to an entirely new sector or area? Such actions truly separate the men from the boys in strategic planning since the enterprise's ability to innovate and execute becomes critical, e.g., Xerox long recognized the advantages of PCs and local and wide area networks; DEC, the internet; to say nothing of the powerful Prodigy joint venture of IBM, CBS and Sears Roebuck. But, so what! They couldn't execute or they were too early.

There is nothing we can admire more than the few firms or individuals who successfully exit a prosperous but increasingly commoditized field while positioning themselves in one with higher growth or a more promising future. Most firms that try to accomplish this, for understandable reasons, try to keep feet in both camps. But, that strategy typically is not an optimizing one, whereas those firms who cross the Rubicon gambling their entire enterprise truly gain my admiration, but it is not easy. Many enterprises stumble or fail (initially Monsanto, Seagrams, Harris) either because they do it half-hearted by keeping one foot in either camp or don't know enough about their company to truly reposition it. Sadly, in many cases, they or the analysts underestimate the time it takes to fully and properly execute such strategies. So, there must be great elation when one succeeds, as Ralph Roberts felt, when he exited the belt business and created Comcast and Kimberly-Clark when they took on Procter and Gamble.

b. Tactical Planning

The world frequently views new strategies as 90% inspiration and 10% perspiration. But, in fact, as successful firms have demonstrated over and over again, it is quite the reverse. All too often, the broad vision statements and strategic and five-year plans are not accompanied by practical, implementable and doable tactical plans.

Rolling tactical plans, which typically can be prepared for two-to-three-year periods in six-month-to-one-year increments, serve in the first instance to test the broad assumptions, analyses and goals of the strategic plan against practical realities such as available human and financial resources, scheduling and timing, the ability of the enterprise to properly mesh its research, development, advertising/marketing and deliverables, etc. For example, some of the best thought-out strategic plans can lead headquarters to overstaffing and premature commitments for office and IT support facilities because of a failure to recognize the difficulties and lag times in recruiting, training and redeployment of field staff and plants and integrating strategic acquisitions.

More importantly, well-prepared tactical plans serve as a key link between an enterprise's monthly and quarterly financial reports and the grand strategic plan and are the key tools for adjusting and updating these plans to the realities of the market, issues of timing, scheduling, changing economic and financial conditions, shortage of staff resources, etc.

The danger for many AEC companies adopting a grand strategic plan without suitable and detailed tactical plans is that the failure to meet the initial strategic plan targets can easily be explained by the fact that it is a five year plan and one will catch up. This has proved a serious pitfall for many AEC enterprises, especially when accompanied by a release of reserves to cover the early shortfalls, with the hope that future earnings will bail the firm out.

So, what is a tactical plan? For most enterprises it should, as noted, be the bridge between their monthly/quarterly financial statements and the strategic plan. The tactical plan should spell out with appropriate metrics, ratios, etc., how the strategies must be implemented by addressing such critical issues as: staff and funding needs; marketing and sales targets; plant capacity and operating costs; cash flow at the enterprise's reporting division, affiliate and subsidiary levels. To achieve the strategic plans and goals, the exercise may also expose seams between the strategic plan and the enterprise's current organization and operations since the tactical plan is forced to either deal with the company as it is organized or encourage a reorganization of the enterprise, often one of the most painful experiences in the exercise.

Tactical planning also protects an enterprise from broad gloss-overs. The enterprise may well have a global strategic plan where the average target growth rates are reached but the growth rates of individual divisions vary widely from target. Many companies accept this as a given, but a well-prepared tactical plan requires managers to address such anomalies and to focus on whether the broad vision statement and strategy picked up only a trend or was actually a useful business exercise.

The best way to execute a tactical plan is, in fact, to organize it in the same fashion as the enterprise's monthly or quarterly reporting but perhaps in less detail. Modern information systems, fortunately, lend themselves to this approach and one can also incorporate sophisticated multi-level marketing programs in such tactical plans.[‡]

[‡] Too often many AEC firms confuse sales and marketing. Sales are the actual interface with the customers and clients and the effort to find and close orders. Marketing not only involves broad strategies but guiding and monitoring of the sales force to ensure its effectiveness and efficiency and here, the interface with tactical plan can prove quite useful.

The typical matrix of revenues, direct and indirect labor, other direct and indirect costs, etc., found in monthly financial statements is ideal for tactical planning.

As we discussed earlier, there is, however, a quantum leap in complexity when an AEC firm is considering a paradigm shift in their business model or strategies. Here, all the tactical issues discussed above increase in complexity because prior reporting data and procedures cannot as readily provide guidance and planning inputs given the paradigm shift. A great deal of time has to be given to developing new procedures and formats for the tactical plan, though such shifts provide excellent opportunities to look at what competitors who have made comparable successful shifts are doing.

Finally, two-to-three-year tactical plans should be continuously updated and if necessary, refocused or revised every six months or one year.

Another key component of both the strategic and the tactical plan, especially if an enterprise is making a major shift in strategy and/or focus, is to avoid the tendency to widely distribute investment funds. Each enterprise has its own unique culture but many larger ones share with political systems, a difficulty in saying no. Thus, while the Boston Corp. and other consulting firms have long espoused the theory of turning mature operations into “cash cows” to fund investments with higher growth opportunities, it is easier said than done. It often means telling some of the companies’ traditionally most successful divisions and managers that they are going to be starved for new investments while committing investments to chancy or questionable but theoretically more promising opportunities. This, to begin with, is a problem for all organizations, especially some of the best-run. Furthermore, many businesses are often “quasi”-feudal organizations where large fiefdoms are profitably run by managers with considerable autonomy and a traditional right to invest a large amount of the cash flow under their control, despite return on investment thresholds and other tools used to discourage the hoarding of cash. It is difficult to say no to such successful managers and hence, the tendency in all but the most tightly run enterprises, to spread investment capital around.

Here, tactical planning is both an advantage and disadvantage. The advantage is that one can closely monitor such activities. The disadvantage is that such planning also closely monitors new initiatives, frequently providing ammunition, maybe correctly, to the successful line managers’ claims that their hard-earned funds are being wasted in a harebrained scheme when, in fact, it may not be a harebrained scheme but an initiative or paradigm shift that is taking more time to develop than originally anticipated. These are the moments that try and test even the best CEOs and CFOs.

4. **Marketing New Project Delivery Systems and Concessions Internationally**

a. Current Structure

As noted, the international construction marketplace is heavily slanted towards design/build, turnkey, BOT, or other variants where the lead is usually provided by the constructor. In industries such as chemical, petrochemical, refining and power where the U.S. has a strong tradition and capability in EPC and turnkey delivery systems, the U.S. firms can be, and often are, very competitive. In other areas such as public works, as noted, at least until recently, the U.S. tradition of design/bid/build is often at odds with international practice and preferences. There the Europeans, Japanese and Koreans are leading the pack.

The Japanese, and to a lesser extent the Koreans, have taken that approach to another plateau. They often compete in trading company (Japan)- or Chaebol (Korea)-sponsored consortiums, where they can readily include most project components -- engineering, construction, equipment, supplies, materials and financing – and by leveraging their purchasing and bartering power, can be exceedingly competitive. Until the U.S./UK and other less integrated contractors learn how to become integral members of "total delivery" teams, they could be at a competitive disadvantage. But, such large consortiums can also prove expensive, cumbersome and even more important, inefficient bidders, e.g., equipment vendors may push uneconomic bids or access to overly sympathetic financing may encourage reckless bids (Korea, Spain, and Germany).

b. The Future Structure

In addition, given the current financial difficulties, many major international contractors are facing, we are also witnessing a restructuring and enlarging of these "delivery teams," especially when pursuing privatization initiatives and concessions. These new teams, as discussed in Session 6, increasingly include alliances with non-traditional team members including:

- Finance: Banks (private, public, multi-national), insurance companies, public or private pension funds, infrastructure and hedge funds, venture and private investment funds, investors and developers, etc.
- Operators: Firms that provide operations and maintenance services in such fields as:
 - Airports: Heathrow, ADP, Hochtief, Vancouver, Vienna, Milan and Lufthansa

- Water and Sewage: Vivendi, Dragados, American Water Services, Resources, YTL, American Waterworks, Thames Water, United Water, U.S. Filter, MWH, etc.
- Ports and Shippers: Rotterdam, Folkestone, Dubai, Singapore, Hamburg, SSA, Maersk, Evergreen, etc.
- Solid Waste: BFI, Dragados
- Toll Roads and Bridges: EGIS, Cofiroute, Transfield, Ferrovial, Cintra, Brisa, ACESA, Autostrade, Transurban
- Energy: Eléctricité de France, Endesa, Hydro Quebec, RWE
- Rail and Transit: Systra and SNCF (France), D.B. (Germany), MRTA (Hong Kong), etc.
- Suppliers/Manufacturers/Vendors:
 - Rail and Transit: Siemens, Bombardier, Hitachi, Sumitomo and Rotem
 - Power Generation: General Electric, ABB, Cummings, Mitsubishi, Hitachi, Toshiba
- Materials and Suppliers:
 - Steel Companies: Posco, Nippon Steel
 - Cement Manufacturers : LaFarge
 - Fabricators: American Bridge

5. **Establishing a Foreign Operation or Office**

a. Is the International Market for You?

As we discussed in earlier sessions, many AEC firms, even outstanding ones, are often ill-prepared or equipped to work in international markets. The work is expensive and time-consuming to promote, margins are lower and the practice differs significantly from typical home market work. Planning or project definition is far more demanding; design commissions and construction projects are often price-sensitive; variants of turnkey or design/build are typically more common; and in the non-OECD world, public sector work still tends to predominate. In addition, U.S. engineers and contractors have to

compete with firms from Europe and Asia that, as noted in previous sessions, may be more vertically integrated, offer a broader range of expertise and are better funded, with stronger partners and/or are affiliated to, part of, or supported by, conglomerates (Korea, Japan and Italy), universal banks (Germany), state pension funds (France, Italy, Quebec), etc. If, despite these admonitions, you think you do want to go abroad, you must be prepared to bring considerable flexibility to the effort.

- If your firm is not comfortable with design/build, don't go.
- If your firm is not prepared to accept a higher degree of uncertainty, don't go.
- If you and your colleagues don't like to travel or enjoy different cultures, don't go.

b. Targeting an Appropriate Market or Country

If you decide to proceed, you must carefully evaluate your own firm's strengths and weaknesses, and focus your effort on your strongest assets.

Recognize who your firm is.

- Do you offer unique services or a service in growing global demand?
- Do you have a proven "in-house" champion to pursue overseas work?
- Are there demands for your services (e.g., are you already receiving overseas inquiries)?
- Do you have staff interested in and able (multi-lingual, etc.) to work abroad?
- Do you have sufficient financial resources for the effort?
- Do you have throw-weight in your domestic markets and is this transferable to international markets?

What unique or outstanding expertise and experience does your firm have that will attract a foreign client, add value to a prospective host country partner or increase a team's chances of winning a project?

Develop a clear strategy and decide whether:

- To market a narrow technical skill or a single client,
- To target a specific geographic area, or
- Undertake a broad-scale marketing or investment effort, then
- Decide on the sector, project or program you propose to pursue.

Once you decide on a field, pick a promising country, countries or region and ensure the target:

- Has a tradition of employing foreign AEC firms?
- Has a stable government(s) and attractive economy?
- Has predictable legal, contract and tax systems and transparent procurement processes?
- Have attractive sponsors, an interested current client and/or sources of financing for programs and projects in general, and for an initial assignment in particular and/or if it is a region, are support services available from your own government agencies.
- Establish the target, the client(s) and your competition, and
- Find out the client's historic preferences and favored consultants, contractors, and service providers.

Then, decide whether you will market with:

- Existing full or part-time staff?
- Former employees, students, etc.?
- A newly recruited experienced expatriate or national marketer?
- Agent or representative?
- Look for one or more local partners, and/or
- Invest in one or more local firms?

When entering the market, there are a variety of strategies you might adopt. These include:

- Accompanying an existing private client or one of your own country's military, foreign aid or diplomatic services based on the firm's prior work and reputation;
- Selection by a non-home country bi- or multi-lateral agency, e.g., the World Bank, IDB, ADB, AfDB, EBRD, EIB, EU; the Islamic, Kuwaiti and OPEC Funds; USAID, TDA, JBIC (Japan), ExIm Bank (China), Kreditanstalt (Germany), CIDA (Canada), SIDA (Sweden), the UNDP, etc., who use their own consultants and, if you have ideal skills, may also encourage host country clients to select you;
- Host country public and private clients - Traditionally, in most emerging countries, this meant government or parastatal clients but, as we discussed, in recent years, in a number of countries such as Korea, Taiwan, Thailand, Malaysia, India, Brazil, Argentina, Venezuela, Peru, Zimbabwe, Mozambique and The Republic of South Africa, there have also been growing opportunities in the private sectors, as well as for design/build and concession-type programs.

In addition to going on your own, in Session 6 we discussed in some detail, the advantages and disadvantages of alternate forms of international partnering. These most likely will include, as noted:

- Competitors
- Your target client
- Specialized technical firms
- International firm with a local presence
- Host country firms or investors
- Construction contractors (or if a contractor, A&E firms), suppliers and vendors
- Non-AEC firms including operators/owners/clients
- Trading or commercial houses
- Financiers, venture capitalists, banks or pension funds
- Lawyers
- Auditors

- Insurers
- Management consultants

But, in most cases for a firm seeking to enter the international market without following an existing client or offering unique skills or reputation (which would encourage partnering with another international firm), partnering with a host-country firm that can, hopefully, develop into a strategic alliance over time, is the most likely and promising prospect. Host-country partners will usually be an architect, engineer or construction firm, though increasingly, trading companies, financial institutions, public and private investors and other public and private entities are partnering with international AEC firms.

c. Knowing the Target Market

In order to increase your chance of success, learn as much as you can, in advance, about the host country procurement processes and the local and international companies active in the country, countries or region you elect to do business in so that you can, hopefully, associate with a firm that actually has a legitimate chance of winning a coveted project award. The more effort you spend researching the market, the more likely you will identify the firms that are viable contenders for the work, and the more likely you will impress these firms with your ability to help them win. Fruitful areas for in-country or region research include:

- Technical reports on projects similar in nature to ones that interest you
- Discussing the procurement process with foreign commercial service officials or other in-country representatives of your own government's agencies
- Getting copies of contract documents and Terms of Reference for projects similar to the ones that interest you
- Getting copies of successful submittals for similar projects
- Visiting prospective clients and project sites
- Discussing design and construction issues with knowledgeable target market or country sources (equipment manufacturers, contractors or architect-engineers, developers, owner/investors, government officials, etc.)

d. Selecting a Local Partner

As we discussed in prior sessions, finding and nurturing a local partner in most cases is a critical step in penetrating a new foreign market, especially for a smaller consultancy or contractor, or one first attempting to enter the international field.

A firm initially entering the international arena will obviously lack a local office/listening post. But, equally important, it will not be part of the international network of bi- or multi-lateral lending agency consultants or contractors who are typically up-to-date on these agencies' criteria, requirements, procedures and project pipelines. Of almost equal importance, you will not be a part of the international AEC joint venture network. Thus, marketing information will prove difficult and expensive to obtain, and for the few projects you are initially invited to, you may only serve as cannon fodder.

But, many successful international and local consultants and contractors, as their practice matures, become polygamous in their relations, each seeking the "perfect" temporary liaison rather than a permanent marriage. The price paid is all too often a lack of a common or shared professional culture, trust, intimacy and most important, the opportunities for obtaining critical early intelligence. Thus, a nimble newcomer that carefully markets and nurtures an attractive joint venture by offering exclusivity can often replace such temporary liaisons despite less experience by proving more faithful and reliable. This is often the case if the initial contacts are personal (a former employee, classmate, student, etc.), rather than through an agent. A smaller firm, in fact, can capitalize on its size by ensuring the principals and their wives meet frequently; children are trained, recommended to select universities and taken care of while at school; host-country staff is trained in the firm's offices; technology, professional philosophies and procedures are shared, etc. The result is a firm committed to yours, providing advanced marketing and early intelligence. It is also grand fun. Some of my best and warmest friends are current and retired overseas partners.

e. Operating in the Market, Country, Countries or Region of Your Choice

As one would imagine, establishing a branch office abroad is costly and you may decide that it should be deferred until your firm actually wins one or more projects or investments. This puts even more emphasis on the need for a strong alliance with a local partner to gain knowledge of business customs and practices until you can decide to develop your own office. Here is a summary of some of the critical factors to be considered as you focus and build your international practice.

- Structure an agreement with your local partner, if you have one, early in your relationship that spells out specifically each party's responsibilities, liabilities, hopes, goals and objectives.
- Secure a local legal/accounting professional to advise on local, formal and equally important “ad hoc” corporate, contract and tax issues.
- Learn as much as you can about the culture, business practices and active competitors in the target market you hope to work in.
- Adjust your negotiating style to fit the customs of the country or countries.
- Be certain you understand as much as you can about the host country procurement process. Research existing projects to determine the approach taken by successful firms and the selection, negotiation, bonding, surety and billing procedures.
- Commit, if possible, the time of a senior officer of your company to serve as a champion with decision-making authority to nurture partners; coordinate marketing staff or agents; supervise the project proposals, negotiations and actual implementation.
- Visit the target country as often as practicable, and plan as many meetings with local officials, your country representatives, and local businessmen as you can.

f. Why a Local Office?

Once you have won a major foreign assignment, as previously discussed, you must decide the amount of technical work you need and want to undertake in your home office; the degree to which you want to rely on, train and supervise your local staff and/or partner to develop their strengths; or use the project as a vehicle to establish a permanent local joint venture or wholly-owned office, staff that office with predominantly local professionals and encourage, assist and technically develop the fledgling office or joint venture.

While the Berger Group is one of the most successful proponents of local office presence, remember:

- In the excitement of winning a choice assignment, local and senior management all too often confuse a project office with a permanent office. But, experience has shown they are quite different. A project office need only be under a project manager; the facilities are temporary and may even be in a local partner or client’s office; need for large support staff is minimal; hiring or leasing space (rental payments, staff

social costs and severance expenses, etc.) are all defined by the project's schedule; there is less need for expensive legal, tax and auditing advice and services; and critical elements such as local staff, vehicles, office budgets and expatriate living allowances are established by the project contract, reducing both the pressure on the project manager and the temptation for the project manager to overspend.

- A permanent office, in contrast, must address all of the above. In addition, such offices are more obvious targets for increasingly over-zealous local tax collectors and lawsuits. Permanent offices require a country director/ manager with greater skills than a project manager. He/she should typically be a well-tested permanent employee with 5-10 years of experience, some in middle to high-middle management and preferably:
 - speaking the local language if other than English;
 - Possessing both technical and managerial skills;
 - Be able to appraise, recruit and mentor talented staff;
 - Understand finance, risk, local currency management, labor and tax laws;
 - Be able to represent the company, both technically, and as an ambassador;
 - If it is a joint office with a local partner, also represent the firm in many of its partnership dealings!

Not an easy position to fill.

But, this is only the beginning. Decisions have to be made on:

- Whether to establish a full joint venture company with your project partner, and here, such issues as intercompany billing rates, overhead charges and even use of the company name can have serious consequences (can you withdraw the name?)
- Tax exposure of expatriate staff, as Union Carbide found in Bhopal, can encourage expatriate management withdrawal (e.g., Coke & IBM vs. Union Carbide & Goodyear in India) and the practical loss of technical

and financial control, while retaining legal obligations and responsibilities.[§]

- Procedures to monitor staff downtime and provide “permanent” in-country staff with alternate overseas work during such downtimes
- Obtaining needed technical support staff from other offices – at what cost or billing rate, who will pay per diems, housing, travel, local taxes, etc. - a problem compounded if you have a partner

Such decisions are not easy to make and can have long-range consequences for a firm’s future in that country or region** and, even more importantly, for overseas work in general.

Thus, your decision framework should include:

- Size of the market – will it justify a permanent office?
- Range of services in demand – specialized, general engineering, etc.
- Technical and quality concerns – are the likely assignments too demanding technically to be undertaken solely with local staff and, if so, can a phased turnover be introduced, and if specialized skills are required, will repetitive projects be available for the newly trained specialized staff? Alternately, can such staff, once trained, be transferred to assignments in other countries?
- The need to institute and maintain proper technical, administrative, financial and managerial controls.
- Whether your current local partner is an appropriate long-term partner. If not, can or should you go on your own or with another firm?
- Whether you can control your name, e.g., DeLeuw Cather lost control of their name in Thailand, Ireland, Canada, etc.††; and quality, e.g., will

[§] In Brazil and, until recently, India, for example, high taxes and other restrictions on salaries, licensing and royalty agreements, dividends, etc., serve to minimize foreign staff and transfer effective control to the host country staff, while the foreign company often continues to retain the liability and risk.

** The Berger Group set up a joint venture with a local structural engineer in the early 1960s in Singapore. We agreed that our local partner would independently execute all small assignments defined as under \$250,000 (US). Not surprisingly, all our subsequent assignments were under \$250,000, including work in Indonesia where we had a second partner who became increasingly alarmed by our arrangements.

†† In fact, Deleuw Cather, now part of the Parsons Transportation Group, frequently found themselves competing under the same name with their former affiliates.

major current clients be disappointed with the quality of the work produced by a local start-up?

- Where can the work be done most profitably in the short-term? Long-term?

The local office once established must, hopefully, prove competitive and successful in their own markets while, at the same time, provide the presence, core resources and platform for winning and executing other significant commissions. In other words, you “*go global by going local.*”

In summary, remember that staffing up for project offices in a foreign country is one thing, but building a successful self-sustaining local office and integrating it into your global organization is quite another. Berger typically has 70-80 local overseas offices at any given time but only 20-30 stand the test of time (10 years or more).

6. **Class Discussion**

a. Is Your Firm the Next Enron?

- What would be your most important concerns?
- What warning signals would you look for?

b. Bechtel’s Power Outage

- What is Bechtel’s brand?
- What did Bechtel do wrong?
- Why did Bechtel reduce the value of their shares?
- What was the impact of Bechtel being privately owned?
- How did balance sheet borrowing affect Bechtel?
- What would you have done differently?

c. Do you think “The Lexus and the Olive Tree” was a useful course reading?

- What is a trapeze?
- What is a trampoline?

- Is globalization irreversible?
 - How has globalization affected the ruling elites?
 - How are China, Russia and Japan responding to globalization?
 - How should they respond?
 - How will it affect your careers?
 - Are you likely, during your career, to work at home rather than an office?
 - If you were the leader of a smaller nation, how would you respond to globalization?
- d. Do you have suggestions for other course readings?

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<http://ocw.mit.edu>

1.463J The Impact of Globalization on the Built Environment
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