

### Session 3—International Turnkey Experiences and Development: Lessons Learned

#### Session Chair:

*Dr. A.M. (Tony) Yen*  
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#### Session Highlights

- Turnkey participants have different interests and motivations. Successful projects require communication, understanding and a willingness to work together.

- Forming partners and teams for turnkey projects are important decisions. There must be trust, competence, a willingness to take chances and a commitment to succeed.

- Complex projects with involved and detailed requirements take longer to complete and have higher risk. Environmental approvals, intergovernmental coordination, and finance should be in place prior to the turnkey procurement.

- Turnkey projects require innovative approaches that balance the interests and risks of the participants. Considerable time and cost savings are realizable.

*Anthony Daniel*  
Chairman  
PB Transit and Rail Systems, Inc.  
San Francisco, California

The turnkey experience can be good or bad, it depends on how it is undertaken. Typically the client wants the contractor to undertake most of the risk, while the contractor wishes the risks to be shared. The client is motivated by the having the project done well for the public and tends towards the conservative. The contractor is driven by profit. There must be an understanding and a willingness to work together.

The successful project requires that the responsibilities of the parties be clearly defined. The procurement documents need to be clear and equitable. In particular the project must have a champion, someone committed to the project's success. The financial considerations must be adequate, contractors will not undertake projects that are inadequately financed. There must be a well defined base plan. There must be good organization including the client team and the contract team.

Mr. Daniel cautioned relative to defining the length of the operating period required of the contractor. Long operating periods, e.g., over fifteen years, include the period when equipment becomes less reliable. The contractor will

compensate for this added risk by including a significant cost in the operating agreement. As a consequence the cost of the project for the client will be somewhat more than would be the case with a shorter operating period.

In summary the following must be present:

- understanding on both sides
- the right partners
- the willingness to take chances
- the parties must listen to each other
- an understanding that this is not business as usual
- commitment to succeed

*John Smith*  
Executive Director, Transport Planning  
New South Wales Department of Transportation  
Sydney, Australia

Sydney is a region of 2.4 million people with expected growth of one million by the year 2021. Currently, there is a seventy-five percent modal split for transit for travel to central Sydney. Continuing investments in transit systems including existing rail system upgrades, new bus fleet and interchange, and terminal facilities.

The city has both the European urban development of higher desensitizes and transit focused, and the American suburban, low density development recently. Air quality as an important issue in transport policy.

Sydney has adopted key directions for future growth: more compact city, better environment, more equitable and efficient city, effective implementation strategy. Integration of transportation and land use, e.g. similarities to Portland, Oregon, with emphasis on implementation of plans. Based on those key directions, transportation policy shifted to accessibility rather than mobility. Recognition of the importance of the private sector in shaping the city through urban renewal, road and transport projects.

Two turnkey transit projects are under development:

(1) New Southern Railway—10 kilometers of underground heavy rail, connecting the domestic and international airports. Estimated daily ridership is 46,000 passengers. The project under construction with a scheduled year 2000 completion. The total project cost is \$700 million, including private sector investment in ownership of four stations. Complex joint public/private agreements for design and construction, operations and maintenance, and consortium station access and train service fees.

(2) Light-rail project (Ultimo Pyrmont) connecting central Sydney with urban renewal area which includes casino, residential and commercial developments. One project consisting of ten stations spread over 3.7

kilometers including on-street and dedicated rail right-of-way. Project cost ninety million dollars including government grant of twenty-five million dollars. A series of agreements including a project deed, a design and construct agreement and, a land agreement. Fares will be set by the consortium with performance standards defined in deed.

Mr. Smith acknowledged the following lessons learned:

- turnkey projects take a long time (five years in development)
  - contracts are complex and intertwining
  - need to understand the relationship between transport and land use
    - keep organization "lean and mean"
    - need capable professionals when they are required
    - all parties, including politicians, need to understand risk and its apportionment
      - there must be trust among the participants
      - assign responsibility commensurate with capability and maintain accountability for design and construction
        - keep the focus on outcomes
        - engineering and project financial resources must be consistent.

*Robert Weber*

*Director of Systems Integration*

*Siemens AG Transportation System Group*

*Erlangen, Germany*

Mr. Weber observed that turnkey projects are always large and high profile in nature. The project's size, he noted, limits the potential numbers of turnkey contractors. Among the challenges of such large scale projects is the client inexperience and the need to develop a strong client-consultant relationship. Other important factors are the correct systems definition, the engineering interface and the project finances.

The following recommendations were presented:

- as systems integration is very important, a single contractor and a one-hundred percent turnkey undertaking is preferred.
  - important decisions should be demand led and not systems led.
  - intergovernmental coordination and finance should be in place prior to the turnkey procurement
    - select a competent contractor
    - industry is willing to participate in finance, ownership and risk but the solutions must be realistic

In conclusion, it was observed that turnkey projects require new approaches and that thirty percent cost savings and two year time savings are realizable.

*José Barbero*

*Metrovias, S.A.*

*Buenos Aires, Argentina*

Following an extended period of severe deterioration and heavy subsidization under public ownership and operations, beginning in 1992 the government advertised concessions for individual transit lines and the Metro. Under the concession agreements, private concerns would operate, maintain and rehabilitate the individual components of the system while the government would continue as the owner of the system. Two bids were solicited, one for operations and a separate bid for capital improvements. For operations concessionaires had to establish how much subsidy would be required to maintain fare levels. Capital improvements emphasized replacing obsolescent and deteriorated system elements.

Concessions were awarded in 1993, with private operations initiated between 1994 and 1995 for individual services. Since 1994, significant improvements have been observed in service quality and ridership. On the Metro with a base of approximately one million daily riders, a fourteen percent increase in ridership has been experienced since 1994. On some segments of the transit system with a smaller base ridership the percentage improvements have been much higher than on the Metro. Surveys of riders have indicated that passenger satisfaction has improved to eighty-five percent from less than fifty percent in 1994. The subsidy required for the Metro has decreased by two-thirds since 1994 and is projected to decrease by a further fifty percent by the year 2000.

Mr. Barbero observed the following lessons learned:

- Government must be reliable and timely in meeting its obligations with the concessionaires. The initial hesitancy of private companies to be concessionaire has decreased as the timelines and reliability of the government has been demonstrated.
  - A number of companies with limited or no transit experience have participated as concessionaires. New technical and managerial experience has resulted.
    - Concessionaires are paying taxes and otherwise contributing to the local economy.
    - Ridership increases resulting from service improvements may render the existing capital program inadequate.