Daniel M. Frances, P.Eng., Ph.D.
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OBJECTIVE

Leverage 25 years of extensive business and technical experience to significantly improve key success measures of organizations through the practical use of Operations Research and Information Technology

RELEVANT EXPERIENCE

Desco Consulting Services **(2001-Present)**
President
MAJOR ACHIEVEMENTS

- Performing a simulation study for improving throughput at the Mississauga Plant of Pratt & Whitney
- Developed a risk assessment model of blood product shortages for Canadian Blood Services.
- Assisted BP Energy Canada and Great Lakes Power to become Market Participants in the Ontario Electricity marketplace (this work was completed in association with Grid Management Consulting)
- Developed a detailed financial optimization model for Ontario Power Generation.
- Delivered an on-site course in Computer Simulation to Hatch Engineering Consultants

University of Toronto **(2000-Present)**
Department of Mechanical and Industrial Engineering
Lecturer
Responsible for setting up and delivering courses in Information Systems Infrastructure, System Modeling and Simulation, Production and Resource Models, and Introduction to Operations Research. Supervise undergraduate theses.
MAJOR ACHIEVEMENTS

- Introduced a 3rd year information systems infrastructure course and a graduate course in simulation.
- Championed successfully for Java to become the undergraduate language of choice
- Expanded the 3rd year courses in simulation and production to include access to commercial software.
- Introduction to Operations Research (at the graduate level) now recommended by other engineering departments (e.g. civil) for research students involved in model development.
- Set and marked Operations Research and Facility Planning exams by Professional Engineers Ontario.

Hydro One
Manager, Information Assets **(1995 – 2000)**
Responsible for management of IT investments, including the power system data centre for provision of complete and up-to-date information on all power system components and their interconnectivity. Accountable for NT and UNIX servers (e.g. database, applications, Web), development and maintenance of applications (using VB, C, MS Access), interfaces with other enterprise databases (e.g. SAP, Peoplesoft, Passport) and database management (e.g. Oracle).
MAJOR ACHIEVEMENTS

- Leveraged extensive data collections across the organization to significantly impact on asset management decisions (capital value of 5B$). A life-cycle management system for asset identifiers was implemented on all major enterprise systems: Passport, Peoplesoft, and SAP.
- Streamlined the hardware, operating and database environment to use a single PC client device, a single database environment – Oracle on NT, and a single centralized configuration of powerful Sun/Solaris compute servers, to meet the critical needs of power system engineers.
- As Team Leader – Equipment Registry for the Market Ready project, refined the Market Rules for facility registration (jointly with the Independent Market Operator) to implement a standardized approach for equipment data collection from all electricity marketplace participants. This resulted in a significant simplification in the registration procedures for all market participants in Ontario.

- Enhanced and re-positioned a database previously used solely for engineering application to meet Hydro One's legal requirements to register with the Independent Market Operator all electrical equipment connected to the Ontario High Voltage Grid.

Ontario Hydro
Section Head, Computer Services **(1993-1995)**
Responsible for provision of all computing services to the business. This included both engineering applications (e.g. power system simulation and analysis) and business applications (e.g. capital construction planning).
MAJOR ACHIEVEMENTS

- Established formal processes and documentation for maintaining the databases.
- Implemented analytical applications software to study planning scenarios of the Ontario power system. These applications provide key analysis to ensure a continued reliable electricity supply.
- Provided an IT Infrastructure that met the end-to-end computer services needs of the system planning engineering and business analysts.
- Established a strategic partnership to merge duplicated production processes of simulation base cases.
- Implemented a new management process for tracking customer commitments.

Ontario Hydro
Section Head, Operational Planning Facilities Department **(1981 - 1993)**
Responsible for identifying opportunities for reducing the overall production costs of the organization and specifying, developing, implementing and maintaining IT applications.
MAJOR ACHIEVEMENTS

- Identified and implemented sophisticated mathematical modeling methods for real-time daily production scheduling. A novel application in North America resulting in savings of 5M$ per year.
- Developed and very successfully implemented a database methodology for supporting a massive reorganization of more than 10,000 staff into 3 successor organizations.
- Chaired the NERC Oil Conservation Team for oil consumption reduction across Canada and U.S.

Ontario Hydro, Engineer, Resource Utilization Department **(1978 - 1981)**
Responsible for developing methodologies and software for optimized production scheduling.

Ontario Hydro, Engineering Systems Analyst, IT Department **(1977 - 1978)**

IBM Canada Ltd., Systems Analyst **(1970)**

RELATED EDUCATION: Ph.D.(1974), M.A.Sc.(1972), B.A.Sc.(1970) University of Toronto.

FOREIGN LANGUAGE PROFICIENCIES: Spanish, Dutch, Hebrew

PROFESSIONAL MEMBERSHIP: Professional Engineers Ontario (PEO), INFORMS, CORS.

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Publications and Conference Papers

1. D.M. Frances and H. Hume, "A Simulation Model for Predicting Critical Blood Product Shortages", Annual Meeting of the American Association of Blood Banks (AABB), November 1-4 2003, San Diego, California.

2. D.M. Frances, S. Sadat and R. Kopach, "A Model for Assessing the Medical Risks and Consequences of Blood Product Shortages", Annual Meeting of the Institute for Operations Research and the Management Sciences (INFORMS), October 19-23 2003, Atlanta, Georgia.

3. H. Habibollahzadeh, D.M. Frances and U. Sui, "A New Generation Scheduling Program at Ontario Hydro", IEEE Transactions on Power Systems, Vol. 5, No. 1, pp. 65-73, February 1990.

4. V.F. Carvalho, G.F. Pessione, D.M. Frances, and M.A. El-Kady, "Decision making Under Uncertainty in Seasonal Operations Planning", Electrical Power and Engineering Systems, Vol. 11, No. 3, pp. 170-175, July 1989.

5. N.J. Thadani, J.A. Findlay, M.N. Katz, B.D. MacKay, D.M. Frances and C.T. Chan, "An Integrated Hierarchical Forecasting, Scheduling, Monitoring and Dispatching System for a Large Hydro-Thermal Power System", International Federation of Automatic Control (IFAC) Symposium, Beijing, China, 1986.

6. J.D. Beamer, D.M. Frances, D.T. Lee, J. Lubek and G.F. Pessione, "A Current Methodology for Assessing Risk of Generation Surplus and Shortfall at Ontario Hydro", Presentation at the Canadian Operational Research Society (CORS) Toronto, 1986.

7. W.Y. Ng, D.M. Frances and P.T.L. Chan, "Security Constrained Economic Power Generation Scheduling Using Generalized Generation Distribution Factors and Linear Programming", Paper presented at the Canadian Conference on Industrial Computers, Hamilton, Ontario, May 3-5 1982.

8. D.M. Frances and P.T.L. Chan, "An LP Model for Economic Power Generation Scheduling Subject to Transmission Limitations", Paper presented at the TIMS/ORSA meeting, New Orleans, April 30-May 2, 1979.

9. A.A. Cunningham and D.M. Frances "A Data Collection Strategy for Estimation of Cost Coefficients of a Linear Programming Model", Management Science, Vol. 22, No. 10, June 1976.