

: *What is a Planning Support System?*

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Reading the trade press, academic articles and web sites forces those of us interested in computerized support for decision making to make some sense of a wide array of buzzwords. Henry Morris is now arguing for “decision-centric BI” with the acronym DCBI; Julie Hall is pushing BI for CRM; and Richard Hackathorn is promoting eXtreme Data Warehousing or X-DW (see DM Review, June 2004). Much of the challenge to us comes from consultants and vendors trying to find a new product niche and create interest in a technology development. Some of the challenge comes from drawing ever narrower distinctions and creating narrow categories related to the purpose of computerized support. This Ask Dan! moves up to a broad category of computerized systems -- Planning Support Systems. The acronym PSS is sometimes used for these systems, but I have also seen the acronym PDSS used for Planning and Decision Support System. Working on the new PlanningSkills.COM website has forced me to investigate the PSS and PDSS for an evolving content channel on planning technologies. So what is a PSS? Is a PSS different than a DSS?

Computerized planning support systems are a sub-class of decision support systems (DSS) that serve a special purpose, assisting a person in completing planning analyses and tasks. Some general planning tasks that can be supported using software and computerized systems include gathering planning relevant information, evaluating courses of actions, preparing plans and monitoring results and evaluating contingencies.

For many years, Planning Support Systems were primarily model-driven DSS, but some data-driven DSS were also used for situation monitoring and control and for processing ad hoc database queries to obtain information needed during a planning process. In some situations communications-driven DSS are useful in supporting distributed planning activities. Also, a number of software vendors have attempted over the years to develop knowledge-driven DSS to support specific planning domains like strategic business planning. So far, knowledge-driven DSS for planning support have been unsuccessful. Finally, building document-driven DSS for supporting planning tasks is a major opportunity that has not been adequately explored and exploited.

Specialized planning support systems and software have been developed for project management, budget planning and management, operations and supply chain optimization, resource allocation and scheduling.

The targeted user for a planning support system of whatever type DSS is a planner. A person in filling a planning role may be a line manager and decision maker or a staff specialist. Staff specialists in finance or marketing who have a planning role may use a planning support system and they may develop more customized computer support as part of a special study.

From my perspective the classic book about planning support and computerized planning special studies was written by Professor Tom Naylor and published in 1979. Naylor's book *Corporate Planning Models* developed a theory of corporate planning modeling, reviewed the state of practice up to 1978, and “outlined a systematic approach to the design, development, and implementation of corporate planning models (p. iv).”

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Naylor reviewed financial planning models, marketing forecasting models, econometric marketing models, production planning models, and an integrated corporate planning model. His book also included 4 case studies and a discussion of SIMPLAN, a planning and modeling system. Naylor's case studies describe model-driven, computerized planning support at Hammermill Paper Company, Dresser Industries, CIBA-GEIGY, and Tennessee Valley Authority (TVA). Often planning situations involve development of computer support for a special study rather than development of a planning support system for ongoing analysis and use.

Currently, the Centre for Advanced Spatial Analysis (CASA), an initiative within University College London, focuses on emerging computer technologies in several disciplines that deal with geography, space, location, and the urban environment. The Director of CASA is Michael Batty, Professor of Spatial Analysis and Planning at University College London. The CASA website (<http://www.casa.ucl.ac.uk>) notes "Planning support systems (PSS) was popularised by Britton Harris in the late 1980s as he sought to link GIS to the constellation of techniques of modelling and optimisation which had emerged to support the planning process since the 1960s. One of our best examples of PSS and SDSS is in our PROPOLIS project where we are building GIS interfaces to land use transport models."

A Netherlands natural resources research group, The International Institute for Geo-Information Science and Earth Observation called ITC encourages the use of planning support systems. The ITC website (<http://www.itc.nl>) notes "Development, evaluation and selection of proper policy, plans, scenario, project or interventions are among the very important decisions in the natural resource and environmental management. Planning in such an environment, which includes a variety of complex social, ecological, economical, and cultural processes, requires proper tools/method/procedures integrated in a system called a 'Planning Support System' (PSS). PSS's, are aiming at rationalizing planning and its related decision making processes. It aims at providing necessary support to systematically analyze the information, finding and formulating the problems, structuring and formulating the alternative options, policies, scenarios, and plans, assessing and evaluating their impacts (considering objectives of the relevant stakeholders), and finally selecting and recommending a proper solution."

On the commercial side, Skymark (<http://www.skymark.com>) sells a software package called PathMaker. They claim it should be your Strategic Planning Software. The website claims "PathMaker is designed to provide the infrastructure for systematic planning, review, and the movement of ideas through hierarchies. The tools for evaluating a purpose, or for reaching consensus, are built in. The project pathway provides a facility for reference, sharing, and documenting. There is also a pathway template for Strategic Planning, which is a fairly generic synthesis of the various steps recommended by different experts."

Another PSS package is GroupMind Express (<http://www.groupmindexpress.com>). GroupMind Express helps a user structure a set of steps into a planning process. "Move from divergent to convergent thinking, develop a result from diverse input, yet with solid buy-in." GroupMind according to the website, "lets you hold online meetings, build project workspaces, and create quick intranets, all with built in interaction between people." GroupMind Express seems very similar to GroupSystems (<http://www.groupsystems.com/>) and other model-driven, group DSS, but it is specifically targeted for planning support. Vendors should send me information about other commercial off-the-shelf Planning Support Systems.

Computers have gotten faster, the user interfaces have improved tremendously, planning support is

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more accessible to managers and planners, and the development software is more powerful and easier to use, but the basic theory, the database technologies and the range of possible planning models has remained largely unchanged. Planning support systems help managers and planners in anticipatory decision making situations, i.e. planning situations.

References

Naylor, T. H., *Corporate Planning Models*, Readings, MA: Addison-Wesley, 1979.

PlanningSkills.COM, <http://PlanningSkills.COM>.

The above response is from Power, D., What is a Planning Support System? DSS News, Vol. 5, No. 12, June 6, 2004.

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Last update: 2005-08-06 16:41