: Who uses computerized decision support and analytics?

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Traditionally, many researchers and consultants have treated computerized decision support as something that is important to senior managers involved in areas such as financial services and manufacturing. The trend toward data–centric organizations has heightened the need for computerized decision support, BI and analytics tools in the form of PC-based, online and mobile systems. In line with this trend, the availability and use of these tools outside of senior management roles has increased. Many people use computerized decision support for work and in recent years to aid personal decision-making. Identifying the targeted or intended users for computerized decision support helps to refine, focus and differentiate the specific system. Knowing who does or will use a decision capability helps to inform the content and design of the application.

Let us review examples of targeted users for decision support, BI, and analytic systems.

In 1978, Keen and Scott Morton described six diverse systems and targeted user groups, including: (1) a DSS to help investment managers with a stock portfolio, (2) a DSS used by the president of a small manufacturing company to evaluate an acquisition prospect, (3) an interactive DSS used by product planners for capacity planning, (4) a model-driven DSS used by a brand marketing manager for making marketing allocations, (5) the geodata analysis and display system (GADS) used to redesign police beats, and (6) a DSS to explore and define alternative school district boundaries. These innovative unique DSS provided previously unavailable data and information in new formats to key decision makers, however these technologies were siloed and highly domain specific in focus.

Almost forty years later, the “Age of the Customer” and the development and use of sophisticated digital applications has redefined business decision support needs and opportunities in areas such as financial services, retail, aviation, medicine, sports and hospitality. With an increasing focus on customer-based insights, DSS are used as a means of building relationships with customers and disrupting customer engagement. Customer facing organizations are building and buying DSS, BI

and data analytics capabilities to better understand their customers, partners and competitors while creating new revenue streams.

In financial services, managers and staff implement and use analytics, particularly predictive analytics in credit scoring, underwriting, collecting past due accounts, increasing customer retention and up-selling, cyber-crime and fraud detection. Sarah Murray (2016) Financial Times columnist, clothing retail firms continue to make significant investment in DSS, BI and data analytics to harness the valuable data they acquire in-store, online as well as via mobile and social media sources. For digital marketing staff, clothing designers and store managers, the focus is on building an improved understanding of customer behavior to make more timely predictions about upcoming fashion trends ahead of the competition.

Professional sports teams commonly use decision support and data analytics. Team sports marketers and ticket brokers need DSS to better understand their customer base by asking questions such as - How long has a customer been a ticket holder? Has this customer actually attended a game? Were unused tickets sold in from alternate vendors? Coaches use analytics to select players and create the "best" team.

Companies such as Verisk Analytics Inc. and Fico are one-stop-shops for business DSS, BI and data analytics. Verisk Analytics provides decision support capability and data analytics to insurance, natural resources, healthcare, financial services, government and risk management in areas such as insurance underwriting, claims, catastrophe and weather risk, global risk analytics, natural resources intelligence and economic forecasting. While Fico.com cites many uses of predictive analytics, they use data analytics to solve problems in business, government, economics and science.

In healthcare, clinical decision support systems (CDSS) continue to revolutionize the global healthcare ecosystem. Clinical decision support users are varied. They include: patients, consultants, general practitioners or physicians, nurses, pharmacists and laboratory managers. CDSS data sources are diverse ranging from Electronic Health Records (EHRs), disease registries to insurer databases. Clinical decision support software is powered by sophisticated algorithms used to analyze individual and population data in order to better understand patient and population health patterns, diagnose specific illness and devise customised patient care management plans.

Though many CDSS are targeted at healthcare professionals, there is a growing trend in the use of personalized mobile CDSS to support individual consumers/patients. These applications provide insights on alternative treatments and courses of action for those with diabetes, obesity and asthma. Further, CDSS have been implemented in the community to facilitate and support patient-centred care. These applications are often remote patient monitoring solutions. Positive tangible benefits have been observed, positive results include reduced time to make clinical decisions and reduced

duration of mean hospitalization time. Decision support is also widely using as part of medical evidence-based training and evaluation for physicians, nurses and consultants.

Mobile devices and applications have transformed the availability of decision support, CDSS are widely used to underpin mobile health (mHealth) in the context of developing countries. These low cost mobile CDSS are being rolled out as pilot and feasibility studies in countries such as Malawi, Nigeria and Burkina Faso. With limited or minimal medical training and limited access to medical resources, healthcare practitioners in urban and rural communities use mobile CDSS to support child and adult health assessments. This use of CDSS promotes adherence to health assessment guidelines which, over time, should improve patient health outcomes and resource allocation.

Emergency response units, including medical experts, first responders and the defence forces, use DSS to support decision making in the event of mass flooding, road collision, explosions, and mountain, air and sea rescue scenarios. DSS are used for air traffic monitoring. Also, a DSS is used by staff to facilitate manpower planning for the US Marines.

So who uses computerized decision support including analytics and business intelligence systems? DSS are used by the vast spectrum of managers, senior management teams and knowledge workers in a variety of context specific scenarios such as law enforcement, agriculture and medicine. Decision support users include internal and external stakeholders of an organization. Ultimately, any individual or group who has access to a connected device and makes decisions is a potential user of a computer-based decision support application.

References

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