

Finance and Planning Make the Wheels Go Round:

New tools help transportation agency Movia handle complex budgeting

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R E S E A R C H

Aligning Business and IT To Improve Performance

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In the course of our market research and consulting, Ventana Research occasionally encounters end-user organizations that have made breakthroughs in performance management. We solicit their participation in telling members of our research community about these efforts. With their approval, we create profiles that describe real-world examples of innovation in action. We hope that professionals reading them will find not only situations relevant to their own but also new ways of thinking about how to address the challenges they face in striving to improve their organization's performance.

Making the Wheels Go Round

Government agencies typically are averse to change, but they can't always avoid it, and sometimes they must accommodate drastic changes. That was the case in 2007, when the government of Denmark reorganized the nation's geographic units, intending to make administration more efficient. The reform combined 270 municipalities into 98 and 13 counties into five regions. It had a number of dramatic effects, one of which was a major change in how public transportation is financed in the densely populated area around Copenhagen.

The public transport agency that serves the region is called Movia. It operates the buses and trains that serve 45 of the country's municipalities – an area that includes one-fifth of

Denmark geographically but 44 percent of the nation's people and half of the public transport systems, according to Henrik Visborg Thune, Movia's budget group leader. Its territory is crisscrossed by some 600 bus routes, many of which cross municipal borders, in some cases as many as nine of them.



With the changes came new rules for apportioning the costs of the system. From the viewpoint of Movia's finance department, these rules are extremely complex and their effects on budgeting and planning are far-reaching. Prior to 2007 Movia divided its territory into five regions, each of which paid for transportation based on its population. But now municipalities have to pay a share of the cost for each bus that runs through them. It is up to Movia to determine these costs and to provide budgets that tell each municipality what it can expect to pay for transport (Movia also has to build a budget for the entire system). To accomplish this, Thune says, "We have to make precise calculations on each bus line and divide that for each municipality it runs in."

To complicate the situation further, some costs of providing bus service are not fixed, most notably in recent times the price of fuel. And on the revenue side, the number of riders on the 600 routes rises and falls in response to economic conditions, which affects the municipalities' abilities to pay for service. The system's finances are, in short, a moving target, and all these factors affect whether Movia and the 45 municipalities stay on budget. Managing them requires contingency planning and frequent recalculation of actual numbers.

Whereas Finance formerly had to create five less complex budgets, it now must produce nearly 50 far more detailed and changeable ones. And in concert with Movia's operations department, it has to negotiate budget agreements with each of the municipalities.

From Doable to Impossible

The new requirements created an insurmountable challenge for the process Movia staff used to develop budgets. It was straightforward, sufficiently basic that analysts could use Excel spreadsheets to accomplish it. But it was inflexible and limited what users could do with the data. And the financial data was stored in individual spreadsheets, not a common database. As a result, Thune recalls, "It was very complicated to make reports on the data and compare older to newer versions."

AT A GLANCE



Trafikselskabet Movia

Founded: 2007, as a merger of three transportation agencies
Headquarters: Copenhagen, Denmark
Employees: 344 in administration, plus some 4,000 bus drivers on contracts

Project:

Charged with managing half of Denmark's public transport systems, Movia has to produce and update nearly 50 complex, interdependent annual budgets in concert with the municipalities that pay for the buses and trains. Using the IBM Cognos Planning and Business Intelligence tools, the agency developed new budgeting and reporting systems that can handle this ongoing challenge.

Outcome:

- **People:** Movia's budgeting staff collects accurate data, builds and revises budgets, and performs what-if analysis to forecast the future. Municipalities receive regular reports that explain the amounts they must pay for transportation services and help them adjust to changes.
- **Process:** Movia creates initial budgets with input from municipalities, then revises them five times during each year in response to changing conditions.
- **Information:** Consistent, timely information is stored in a central database and is always accessible to planners. Staff can recalculate expenses, revenues and other data as often as necessary to keep budgets up to date.
- **Technology:** IBM Cognos Planning provides robust budgeting capabilities. IBM Cognos BI enables timely reporting to municipal clients and agency executives.

Business Benefits:

Now that it has reliable information and powerful tools, Movia is able to create and manage its budgets more often and easily. The agency and the municipalities are developing relationships that help them serve their communities better and maintain fiscal accountability.

The cumbersome process chronically ran afoul of budget deadlines, forcing the finance team to restrict the amount of detail the document could include. “We would have to finish the budget before we were satisfied with the result,” he says. “We would have to say, ‘This is the best we can do. We have to stop now.’”

When the geographic and administrative shuffle occurred, this “good enough” approach clearly could no longer suffice. The new level of detail it demands increased the burdens on the process, while at the same time any error now is more noticeable and has more impact. An inadvertent error at an early stage can ripple through multiple

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–Henrik Visborg Thune,
budget group leader, Movia

budgets, making accuracy even more imperative. “One small detail in general budget assumptions could affect all the municipalities’ budgets,” Thune notes, and that would mean recalculating all 45 of them as well as the overall one.

Likewise, it was evident that the tools at hand would not work. “It would be almost impossible to do with Excel,” he declares. If it took that route, the department would need to hire 10 finance experts to make all the calculations, Thune estimates, and that was not

an option. Therefore, at the same time as it struggled to complete the first budget under the new requirements, Movia began to look for tools that could handle the intensified workload.

Selection and Implementation

Working with consultants, a team representing Finance, Operations and the department that negotiates bus driver contracts developed a list of requirements, then invited several vendors to demonstrate their planning and budgeting software. They reduced the number to three finalists whose products could meet the most requirements and after further comparison selected IBM Cognos Planning. Once that decision was made, the team also adopted IBM Cognos Business Intelligence (BI) for reporting on the budget data; the new regime mandates both quarterly and annual reports to all municipalities.

The IBM Cognos software provides several key capabilities that Movia had lacked. First, it stores the data in a single database, eliminating issues with data versioning, accuracy and accessibility. Most importantly, Movia now can process all the relevant data in as much detail as is needed for the overall budget or for each municipality. Moreover, operations analysts are using IBM Cognos Planning to develop what-if scenarios to simulate a variety of possible conditions, such as changes in fuel prices or the number of passengers using a line. The abilities to model and report allow the agency to explore the impacts of potential events, to inform its municipal clients about them and thus to avoid some unpleasant surprises for both sides.

Even with such capabilities, implementing the new budgeting system wasn’t easy. The sheer number of interdependent budgets; the volume of data about costs for labor, fuel, maintenance and other items; the allocation of costs according to routes and municipalities; and the many recalculations required made the task far more complicated than anyone expected. For example, apportioning shares of the total cost of each bus line requires a calculation for each municipality it runs in. “First we run the calculations for the smallest municipality, then we take that out of the equation and run the calculations again,” Thune explains, adding that in the most extreme case, “we have to do that nine times.” And a change anywhere along the line requires recalculation of all impacts.

The challenge was made even harder by having to create the first post-realignment budget in Excel at the same time Movia was implementing the new tools. This onerous task validated the decision to migrate. “We didn’t have the data in a database so it was very hard to report,” Thune says. “And the spreadsheet was so complicated that we only had one person who could handle that. When we wanted to make changes, we had to wait until she had the time to input the new data and do the calculations.”

At first Movia tried to run the whole new system on a single server, but it couldn’t handle the massive amounts of data and numbers of calculations. The agency ultimately needed four servers for the system to function efficiently.

This and other barriers, such as changing consultants part of the way through, slowed the development, but after five months, in April 2007, the team of seven people from the finance, contracts and operations functions completed the first version of the budget for 2008.

Continuous Improvement

Refining this tremendously complex budgeting system continues. The initial installation was hindered because the team also had to create a real budget and couldn't easily do both at the same time. The group therefore decided it needed to separate development and production, and it added two more servers (for a total of six in all) for development and testing. It no longer does development while constructing the annual budgets. That was an important lesson, Thune says.

Now that it has centrally stored, accessible information, Movia is able to adjust its budgets more often and easily. To begin each budget cycle, Thune says, Finance determines what costs will be for the next year if the current setup does not change. The municipal representatives offer comment, a second version is created based on their input, and again they comment. "When the budget is set, we've already made three versions of it," he explains. Without the capabilities of IBM Cognos Planning, Movia would not have this flexibility to revise.

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-Henrik Visborg Thune,
budget group leader, Movia

Similarly, the team can adjust the budget during the year; at the moment it does so five times. The system can incorporate the latest versions of all bus schedules and from them determine how many hours for each route and driver each municipality must pay for, so the updates can give the municipalities snapshots of how changing conditions will affect what they owe.

The system also helps the municipalities plan their responses to changes. For example, Thune notes, "Fuel costs are one of the major indexes that we follow." In the spring and summer of 2008, when costs were skyrocketing, some localities found they lacked money to maintain their current levels of service, so they needed to consider ways to cut back.

To help them, Movia's analysts did what-if analysis in IBM Cognos Planning on how much they could save by removing whole routes or curtailing their frequency, as well as the effects of moving passengers from them to other lines. Any such changes are complicated by provisions in the labor contracts. "Usually we have to give three months' notice before the municipalities can make a change, and you cannot deduct more than 8 percent in one contract at a time," Thune explains. These requirements increase the need for rapid and flexible planning and calculation and hence for tools with which to perform them.

Using IBM Cognos Planning and BI, Movia is able to do all this with only three people – a far cry from the 10 it might take to do it using desktop software like Excel.

A Developing Relationship

The transformation impacted not only Movia personnel; it placed a much heavier obligation on the municipalities, especially in the sensitive area of finance. Along with requiring the municipalities to support transportation directly, the new budgeting system encourages more input from them.

As a result, budget decisions must be more consultative and thus take longer to reach. "We are building a relationship that we did not have before 2007," says Thune. "The municipalities are very focused on how much

they should pay for these bus lines, and they want to know often about revenues and expenses. They know we can do quick calculations, so we are under much more pressure to keep up with developments than we were before.” The new capabilities themselves prove daunting to some staff at the municipalities, which are in effect Movia’s customers; they are used to budgeting once a year and then trying to live with the consequences. As well as providing the data, Movia is trying to help them adapt to the increased flow of information and what it means for how they handle their finances. “All decisions are made in the municipalities,” Thune explains. “Because they are purchasing the bus transport from us, they have to agree on what they actually get. It’s a big effort to make sure that all municipalities agree on the changes that we make, especially on lines that cross borders.” Reports constructed in IBM Cognos BI show them not only the current data but also its effects on their local transport budgets; having these reports available helps to clarify situations and explain the costs.

To reach agreements on budgets, Movia also needs to be able to model the budgetary effects of changes in service and costs of providing it, and a great deal of varied data must go into each scenario. “Cognos gives us the ability to make different cubes for each kind of information and interconnect them through formulas,” says Thune. “We can take data about cost, contracts, the bus lines and other things and build one integrated cost model for all of it.”

The modeling capabilities allow Movia and the municipalities to collaborate and should help them build trust in the budgeting process over time. That’s important because Movia wants the municipalities “to move their eyes from finance to operations,” as Thune puts it – to the functioning of the transport system and the level of service it provides to the public. Their enhanced abilities to handle the complexity of the budgets and the apportioning of costs assist in shifting everyone’s focus to what matters most: economically delivering high-quality transportation services to the public.

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