Teaching Case

Making analytics actionable at AllDrinksSoft: MyResults and AMPlify

Ulrike Schultze

Southern Methodist University, Dallas TX, USA

Correspondence:
U Schultze, Southern Methodist University, PO Box 750333, Dallas, TX 75275-0333, USA.
Tel: +214-768-4265;
E-mail: uschultz@smu.edu

This case describes an actual business situation, however, names, places and numbers have been changed in order to preserve the company's anonymity. The case was developed solely for the basis of class discussion and is not intended to serve as an endorsement, source of primary data, or illustration of effective or ineffective management.

Abstract

AllDrinksSoft (ADS), a US-based manufacturer and distributor of non-alcoholic beverages, began its journey into Business Analytics (BA) by developing two performance dashboards: one for its branches and one for its sales staff. By recounting the development and implementation of these two applications, and considering how improvements to them might be prioritized, this case explores ADS's journey into BA. In so doing, it highlights questions about the meaning of BA, the various ways in which analytics solutions can be designed and implemented, what the stages of BA maturity look like and how organizations might progress along this maturity trajectory.

Introduction

It was June 2015 and IT Director, Veronica Du Plessis, was in the office on a Saturday. She had been out of town all week participating in the annual IT Vision Roadshow. For about 5 weeks, key members of the IT leadership team visited 2–3 field sites a week to introduce new products and ideas, and to gather customer feedback on these. One of the new products being showcased this year was a mobile application for account managers' iPads. It was called MyPromos and had been developed by the Business Intelligence and Sales Enablement group that Veronica had been leading since 2013. She was eager to get into the field, where she had started her AllDrinksSoft (ADS) IT career in 2007. Reminiscent of her role as a Business Partner, she wanted to glean first-hand insights into users' reactions to the new app.

MyPromos gathered information about account managers' attempts to sell promotions (e.g., end caps, off-shelf displays, discounted products) into their accounts. This crucial sales activity had never been tracked before. The new data would ultimately provide the marketing department and the sales organization with valuable insights into the effectiveness of promotional offers in different markets. Over time, as data accumulated, this would allow them to target marketing efforts more precisely. Even though the current version of MyPromos focused on data gathering, future versions would

provide analytics capable of informing sales and marketing decisions.

The reason she had come into the office on the weekend was to work in peace and quiet on her group's priorities, and plans for 2016. This would be the topic of discussion in her upcoming meeting with her boss and CIO Tyler Fonternel (see IT organization chart in Appendix A). While her group's application development plate was full until December 2015, she needed to articulate her group's agenda after that point. There were many competing demands for innovation, and Veronica was keenly aware that she needed to spend IT resources wisely and deliver analytics solutions that positively affected sales growth.

Tapping away on her laptop, she began listing what she regarded as objectives for her group, which consisted of only three people (Veronica and two IT managers). They were ultimately responsible for supporting Direct Store Delivery (DSD) with business analytics (BA) solutions. Their current portfolio of applications included MyPromos, MyResults and AMPlify.

In trying to formulate and prioritize her group's objectives, Veronica pondered numerous questions. What did BA really mean? How was this class of technology solution defined at ADS? On the basis of their experience with BA, what did

successful BA look like and what were the factors for success? And what might be the steps in a BA maturity model that her group could leverage as they prioritized system development ideas? By answering these questions Veronica hoped to gain a clearer picture of what her group's application development portfolio for 2016 should look like.

AllDrinksSoft (ADS)

ADS was a manufacturer and distributor of carbonated soft drinks, juices, teas, mixers and waters in North America. It owned more than 30 brands including MyCola, Lemons& Lime, RootbeerSoda, AquaGalore, FruitPlus, Mr.Veggie and CordialDelight. As its product portfolio crossed multiple categories, ADS had to compete for shelf space across various aisles in a typical retailer (e.g., supermarket, convenience store).

In the past decade, ADS had moved into DSD through a series of acquisitions of bottlers, fundamentally changing the business model of its beverage operations. Previously, the business operated as a franchisor: it owned and marketed the brand, manufactured concentrate and sold it to independent bottlers, who then distributed the finished soft drinks to retailers. This was a low-capital, high-margin business, whose key challenge lay in the franchisor's limited ability to assure the quality of its final product because production, sales and distribution were the domain of third parties.

The DSD model represented an almost complete reversal of the franchise model: it entailed a capital- and operations-intensive business (i.e., manufacturing operations, fleet management) with a low-margin and high-volume logic. Small savings accomplished by streamlining operations, for example, had significant implications for the bottom line. Compared with the franchise days, an execution-focused, penny-wise mentality was needed to ensure ADS's success.

Headquartered in Tampa, FL, the US\$4billion company employed 12,000 FTEs in 2014.

IT at ADS

Tyler Fonternel, ADS's CIO, joined the company in 2004 and by 2005 the landscape had been significantly changed by the introduction of the DSD business. IT's challenge was then to integrate the many bottling companies at a system level. For a start, email and networking infrastructures were standardized and centralized.

In 2006, integrating ADS's systems began in earnest. Given the acquisitions, there were not only multiple instances of SAP running across DSD operations, but there were also dozens of different route accounting systems. While SAP tended to manage (pre-)sales and billing information, route accounting systems recorded all the details related to order fulfillment, that is, inventory at a given warehouse, the loading of delivery trucks, and actual deliveries made.

Route accounting systems generally relied on 'brick' handhelds (see Appendix B for an image) that many account managers and drivers used to manage order-related information. Nevertheless, processes varied greatly across bottlers; some still operated in highly manual, entirely paper-based ways.

The objective of the system integration effort was to consolidate the IT infrastructure so that only one instance of

SAP and one route accounting system (i.e., Route Manager) would support the DSD organization in its entirety. DSD organized its more than 150 branches into three business units (BU) (West, Central and East). Branches represented the engine of DSD operations: they warehoused the inventory that had been produced in one of ADS's 15 manufacturing facilities; they staged and loaded cases of product onto trucks every night to deliver retailers' orders the next morning; they handled returns once the trucks came back at the end of the day. Dispatchers oversaw the logistics of branch operations.

With the introduction of the DSD business model, the IT department was fundamentally restructured. Except for business-facing roles, all IT services were outsourced. Keeping-the-lights-on functions such as maintaining the network infrastructure, data center management and email, as well as systems development work – including configuring and programming SAP – were migrated to third parties. This left the IT organization with about 80 FTEs, the majority of whom were organized into small ~3-person Business Partner teams. Each team was typically composed of a director and two managers. Only about 10 back-office staff remained to complete functions such as data analysis, report generation and vendor management.

Each Business Partner team functioned almost like an independent IT department dedicated to serving their BU customers. They represented IT's primary contact to business users and liaised directly with the various third-party service providers to deliver requisite solutions. In effect, ADS's model for business-IT alignment consisted of Business Partner teams with the director serving as a 'mini CIO' who reported to both an IT and a business VP. Tyler Fonternel explained this matrix model:

> So it keeps everything for that business with one small group of ADS employees. Even the outsourced organizations are highly engaged with the business. So if a finance user has a problem in AP or something, they will know the person – whether in ADS or the outsource partner – who is their support person and they will work directly with them. They know exactly where to go and they have all the resources lined up.

One of the strategies employed by the Business Partner groups who served the three DSD BUs was to get immersed in the business. This entailed spending time observing everyday work practices at the branches and interviewing the staff about the effectiveness of business processes and technology. This immersion strategy, while labor intensive, helped the Business Partners build relationships and trust in the field. Veronica Du Plessis, who had been one of the first IT Business Partners serving DSD, explained the value of this organizational arrangement:

> The business partner role was the right thing to do at the right time. What it meant to us as an IT organization was that it created that relationship where the business would come to *us* first, rather than negotiate their own printer contract with some vendor out in California, for example. We wanted them to adopt *us* and use *us* as their trusted advisor for all things technology. With that you can see savings and standardization. We had to roll out core ERP and route-to-market systems at that time, and without that

relationship, you might never have gotten anything deployed, because the businesses would not have cooperated.

Furthermore, the immersion strategy gave the IT group deep knowledge of the entire process flow in DSD, thus making the Business Partners – rather than the branch managers – the experts on all aspects of sales and order fulfillment. As a result, IT shifted from an order-taker role – fulfilling users' discrete technology requests – to a trusted advisor role. As trusted, internal consultants they identified opportunities for improvements of which the BU may have been unaware. Larry Short, the IT Director of DSD West, expressed IT's value proposition as follows:

> We have the ability to influence top-line growth. We can influence operational efficiencies. We are very fortunate to work within a department that can partner with the business to influence these key areas.

BA at ADS

Given the operational focus of ADS, one of IT's key responsibilities was to provide detailed information on performance throughout the firm's now-complex operations. Paying attention to costs was essential in such a low-margin, high-volume business: with hundreds of million 192-oz cases[1] of beverages being sold each year, a 5 cent per case change in cost had a significant impact on the company's competitiveness.

As part of the system integration effort, which concluded with the implementation of a single instance of SAP in 2010, ADS built the infrastructure for BA. This took the form of a data warehouse that brought the SAP sales data and the Route Manager logistical data together. They adopted SAP's Business Warehouse (BW) technology and prioritized DSD in their development of the data cubes needed for report generation and querying. DSD represented ADS's largest business of ~6500 employees, of which about 1100 were account managers and 2000 were drivers. BW relied on Excel as a front end, thus allowing users to download and manipulate the data in a tool with which they were familiar.

The sales data from SAP populated Margin Minder, a business intelligence solution widely used in the beverage industry. This was a spreadsheet-like tool that enabled extensive querying of sales data and supported sophisticated analytical techniques to unearth causal relationships in the data. However, most DSD users generated only standard sales reports from the tool, which led the IT group to conclude that this end-user computing approach to BA was not effective as the jobs of most DSD users required them to be on the road and in the field. This meant that they did not have the time to sit in front of the computer and do the kind of sophisticated statistical analyses that made Margin Minder valuable. Indeed, by IT's analysis, only about 10 people used this tool to extract anything other than basic sales information.

As expressed by Tyler Fonternel, ADS's approach to BA was shaped by concerns over the appropriateness of end-user computing in DSD:

> The way our business works, our challenge is to keep business analytics very simple, and clear and directed for

people. Because we don't have a lot of people dedicated to sales analytics in the company. We don't want people – especially in sales – doing analysis and all kinds of work to generate explanations. Historically, you had a lot of people who did a lot of data analysis because when they did not like what the data was telling them, they would spin it all different kinds of ways to make it look better. There's still a lot of that going on today. A lot of people are drilling and moving and manipulating and it's 'well, this package combined with this' and they come up with all kinds of stuff. And it just masks reality. We're trying to get rid of all of that excuse-mongering so that everybody looks at it one way and in exactly the same way. They have the same measures. It comes in every day and it tells us whether we've succeeded or we didn't. It's trying to keep it that simple.

The first BA solutions that IT built for DSD were dashboards. The first was MyResults, a dashboard supporting primarily branch managers and dispatchers, and the second was AMPlify, a mobile analytics solution built for account managers. The interactivity of these solutions was limited to drill-downs that allowed users to see trends over time. One of the guiding principles in the interface design was to make these dashboards 'as easy as Angry Birds.'

A key goal of these dashboards was to inform action in a way that 'moved the needle' on DSD's sales growth. As George Meriweather, the VP of IT for all of DSD, explained:

> These dashboards are for people who have so many things coming at them and they need quick snippets of information that then makes them drill a little bit; take action today for some kind of change tomorrow.

Central to the technology's ability to motivate action was transparency and accountability. George Meriweather illustrated this by means of the following scenario:

> So if they had a bad day for haulbacks, the branch managers won't just go 'oh, bad day … I hope no one notices,' but'll go 'oh brother, someone's going to notice!' Because upstream, they know their distribution supervisor is looking at that number. So, they are going to ask the drivers a few questions about why it's not going swimmingly. And hopefully they'll go in with a question of 'how can I help?' rather than all hot and accusatory. And then 'hey, you're still doing it,' and by the third time say 'maybe you're the wrong person for this job.' That's a behavior change that is still ongoing in ADS.

MyResults

MyResults had its roots in an email labeled 'the Daily Flash' (Appendix C), which was mailed to the DSD management hierarchy upward of the branch manager. The report focused on key sales and operational metrics, and compared actuals against targets. Importantly, it included data about all regions, thus supporting internal comparisons and benchmarking. This feature of transparency was maintained in MyResults, which gave users the ability to see not only their own branch data, but also aggregated data and data from other branches.

At its inception the content of the Daily Flash was manually assembled from multiple data sources. This resulted in a daily

IT department scramble that – in George Meriweather's words – resembled 'the dance of the sugar-plum fairies.' Around 2010, the generation of the report was automated, thanks to BW. By 2012, the report could be customized for specific users and for devices in order to better support mobile work.

But the automation of report generation brought its own challenges, particularly information overload. According to Larry Short:

> With lots of reports and lots of information, now the struggle is not to overwhelm the user with 100 metrics when three of them could tell them pretty much 80% of the story.

The objective of the MyResults project was to make the data more actionable. The system was designed to be more specific to the branch and/or region to which the user belonged. The dashboard (Appendix D) was prominently displayed on the landing page of the corporate intranet's portal, MyPortalNet, thus making it easily accessible.

Another strategy to achieve the data's actionability was through its graphical presentation. Not only were visual cues such as green thumbs-up and red thumbs-down symbols employed to relate actual to targeted performance, but the data were organized according to a 'story board.' The story the dashboard told was of beverage cases flowing through the order fulfillment business cycle, that is, from pre-sales to deliveries to returns (i.e., haulbacks). Larry Short explained:

> MyResults v2 is kind of a columns and rows format, but nonetheless, it's sequentially ordered such that you understand what it is about your story that may need attention. What we're trying to do is paint the best story that we can to give the business information that they not only can action, but where they know exactly where to go action. So you can see how this is a very valuable story board, because it helps me know directionally 'what happened? Why did we miss the delivery target? Why are warehouse cuts so high?' Or you've got a sourcing problem. The stock transport order from one branch to the other branch was late. You want to know what pond to go fish in.

In addition, the data were arranged according to the four main areas of concern for a branch: sales, operations, haulbacks (returns) and routes (delivery logistics). Responsibility for these areas was distributed across the branch. Account managers were accountable for sales performance and drivers were responsible for on-time and accurate (OTA) deliveries. This meant that they were expected to drive the route that RoadNet, a logistics optimization tool, had calculated to be the most efficient. The delivery itinerary that RoadNet plotted took multiple delivery constraints into consideration, for example, hitting the delivery time windows that customers stipulated, traffic patterns. Failure to follow the planned route frequently led to haulbacks, which George Meriweather explained as follows:

> We have a cardinal sin here and it's called haulbacks. It's when we loaded a truck according to plan for a customer that wanted it, but by the time we got to deliver it, something went wrong. It could have been the driver who was late; it could have been an accident; it could have been the customer who's mad at us and decided to refuse the order; it could have been that the order was wrong or it might've been that the order was right, but when we got there, the customer only wanted half of it. We call it, 'giving the product a ride.' It is expensive. It has to be under a small percentage of our product sales. That's a very important metric. So when I look at my daily scores, one of the places my eyes go first is 'am I thumbs up or thumbs down on my haulbacks?' And if its thumbs down, I can then drill down and see 'why am I red?'

Allocating clear responsibility for the performance indicators in all four quadrants was not straight-forward though. As Larry Short illustrated, haulbacks were crucially dependent on the correct loading of the truck:

> If we do not load the delivery truck with the correct products – for example, misreading the SKU and thinking it's 'diet' when it's supposed to be 'lite' – this can cause a negative impact that is highlighted in our performance indicators, specifically the haulback metric.

When MyResults v1 and v2 were rolled out in June 2013 and in August 2014, respectively, they were met with considerable resistance each time. In particular, people in the field did not trust the numbers claiming 'I don't look at MyResults, because MyResults is wrong.' Naomi Jarrod, IT Manager for BW, illustrated a common cause for discrepancies between MyResults data and actual reality:

> If the people in the field don't follow the business process, it can have a direct effect on the data coming into the dashboard and ultimately it can affect your numbers. Let's take the loadout for example. The loadout is the number of cases on a truck that are to be delivered. We use the loadout for many things: among others, to determine how many cases we have on the street *vs* in our warehouse and whether we need to produce more product. So, let's say we have a truck with a loadout of 200 cases. However, a situation happens where the dispatcher moves a whole order (for 50 cases) off the first truck and puts it onto a 2nd truck. But he does not follow the business process, which would involve deleting that order from the first truck. Instead, he actually leaves it there and then he keys a duplicate order with those 50 cases and puts that order on the 2nd truck. Now the loadout for the first truck is 200 cases, but in reality it only went out with 150. So, the dispatcher is not following the business process and this will just jack up your data. And then I get challenged because the loadout was 'wrong'.

> Some of these things are not simple to research. In order to bring all of this data into BW, we do a lot of table joins on Route Manager and in BW and it gets complicated. And so in order to prove to the business user that the data is right, you have to dig deep into all of those tables. You are looking for 50 cases out of a 50,000 case loadout! So you are doing data dumps and looking at this and that and then finally you say 'look, there's duplicate orders for this customer; the dispatcher copied the order and he moved it to this truck.' So you literally have to dig into all of these DB tables to find these anomalies. A key challenge is that you have to know the data well enough to know where to go look in order to prove your numbers.

Naomi further highlighted that metrics that formed part of people's performance appraisals were particularly contested:

> Haulbacks are a huge deal. I get calls all the time from people about something with the data. People are paying more attention to this data because they're getting graded on it. Their bonuses are dependent on all these goals that they have to meet. If they don't meet those goals, it's going to hit them literally in their pocket.

> Because we have MyResults, the president of the company is looking at this dashboard every day. He can literally just take a glance and see that we brought back so many cases yesterday (Haulbacks) or we only sold so many cases against the plan. He can see it at a glance. … He calls the VPs, and they're turning around and calling branch managers. … 'Hey … what's going on? You're in the red. We don't think you can catch up because there's only two business days left in the month.'

> What makes the data actionable is that senior management trusts the data. So they're confident enough to pick up the phone and start calling people and say 'you've got a problem!' That trust in the data puts a huge burden on me to make sure that my data is correct; you can't afford to lose that trust.

While there was some concern around how managers used the MyResults performance data, Jim Reynolds, SVP of DSD's Central BU, explained how his organization used red thumbs-down as an opportunity for improvement:

> Our core philosophy around metric score-carding is that red is the new green. We are preparing stretch goals for ourselves. While you may not get to green in the first month, and you may not get there in 6 months, our benchmark is to see continuous improvements against the goal. When we find ourselves falling short of expectations we run CAP reviews or Corrective Action Plans. We sit down and dissect our plan to understand the root cause of why we aren't hitting expectations. 'What do we need to do to change the course we're on to accelerate the improvement?' A style of management that relies on blowing and going, screaming from the rooftops and hoping that performance changes, doesn't work.

Overall adoption of MyResults in DSD was at a disappointing 39%, with considerable variations across the three BUs. The Central region had the highest adoption in large part because their daily management practices now included the dashboard. Jim explained:

> The team understands the importance of a continuous feedback loop. All of our senior team reviews MyResults on a daily basis; I review MyResults each and every day. As we identify gaps in performance we ask our teams to drill down and ask the questions until we get to the root cause. Typically they have an answer because they're going through the same process; it's standardized work. So every morning when we open up our computers, the first half hour of the day is spent reviewing how we did and the balance of the day is following up and taking corrective measures.

AMPlify

In 2012, given the display limitations of the brick handheld, especially for account managers, many of whom had to keep their own paper records of their sales activities if they wanted to identify trends and opportunities, ADS IT started designing a suite of sales solutions – branded MyADS – for the iPad. After MyDay, an app that gathered data (e.g., sales orders) from the account manager, AMPlify (Appendix E) was the second application in the MyADS suite for the account manager.

Kyle Smits, IT Director for DSD East, who had been responsible for the 2013 roll out of AMPlify, explained the significance of this new dashboard:

> In the olden days, the only time account managers would ever have any type of sales information about what a customer was doing, at least on a trending basis, was if their manager ran some reports out of MarginMinder. And that would just be on request and their boss would have to go into the office, run that, print it out, bring it to the account managers, and then they'd have that available in hard copy. AMPlify now delivers to their fingertips information refreshed on a daily basis that they control; they don't have to rely on anybody else to give it to them. That was a big change.

While account managers visited 15 stores daily on average, the actual number of sales calls was dependent on the types of accounts served. Visits to large grocery stores required more time and were repeated up to four times a week, which meant that an account manager would serve about 20 accounts and complete 6–10 sales calls a day. In contrast, an account manager with mostly convenience and drug stores in his/her portfolio might complete 15–25 sales calls a day and serve about 80 accounts, of which many required less than weekly visits. Coupling this activity level with ADS's more than 300 SKUs and numerous promotions, sales was a complex and dynamically changing landscape.

AMPlify's role was to highlight the account manger's selling opportunities. The sales calls that the account manager was supposed to make on a given day were outlined on a map, which color-coded each account based on sales trends in the last 3 months. Kyle explained:

> On the map, we have some dots or bubbles that are red or green based on how you're trending in any account. It's sort of 'hey, you're not doing so well here; go focus on that account.' And then the account manager can bring up the more detailed screens to determine 'is it any given package that's really hurting sales, or is it across the board? What is it?' Maybe you are down in your 12-pack volume and there may be some promotions that you can try to sell in. Or it could be construction going on at that store – on the streets around it – and 'there's nothing I am going to be able to do, really.' … That map with the color-coded store locations is really good from a graphical standpoint, as it draws their attention to where account managers have opportunities.

Besides providing the account manager with tremendously detailed information about products sold to any of his/her accounts, AMPlify provided a benchmarking feature (called 'Head to Head') that was designed to help persuade store

managers to order a certain product or agree to a given promotional display. Kyle elaborated:

> In DSD, your success and failure depends on off-shelf activity, so displays that are not just in the regular shelf set; end caps, for example. And inside the grocery stores it's always a struggle to get space. We, along with our competitors, are constantly asking for it. And it's being able to convince the store manager of the best use of that square footage. So one of the goals of AMPlify was to provide sales information to account managers – at their fingertips – where they could prove that this product has success in a similar store and use a fact-based approach to sell in a promotion. So, 'this is going to sell if you give me that space and here are the reasons why.' That was one of the business problems we were trying to solve with AMPlify.

Adoption of AMPlify lay at more than 70%. Many attributed this to the tremendous value the application offered sales people, who had very few alternatives for accessing sales data. In addition, applying gamification[2] logic, the dashboard included a leaderboard (by branch) that the competitive account managers tended to check with regularity. George Meriweather could personally identify with this use of AMPlify:

> Many years ago, I was a sales person. And if I knew that I was going to get the prize because I was the #1 salesperson in my branch, I cared about that. And often, I did not know how I did until the month was over. Now, with AMPify, I can go in and see exactly where I am TODAY and then I can get gamified into chasing cases to make that happen.

But, given the value that AMPlify offered account managers, how could the ~20% of non-use be explained? Kyle Smits explained that this was because of some branches setting sales targets using a logic that was different from AMPlify's:

> The formula that we use to come up what that account manager's target is based on what that distribution center has as a target for that month and each account manager's historical contribution to the overall branch performance. Some branch managers may consider longer time periods, or they consider different periods of activity to come up with an account manager's contribution percentage. Or they may factor in things that, from a system standpoint, we just don't know. Like 'this guy is getting three new stores that opened up this month.' Or 'he's in a particular territory that does really well in this specific product and I really want him to have a higher portion of the pie.'

Impact of BA
Whether the BA dashboards had succeeded in improving organizational performance was up for debate. Jim Reynolds, SVP of DSD's Central BU, maintained that these technologies had dramatically changed how people in his DSD BU spent their time:

> Previously, a branch manager, if he wanted to evaluate performance, he would have to go out and source reporting

from BW, SAP, Margin Minder, or locally created Excel files; a whole host of different systems. There were inconsistencies with the reports depending on where they were sourced. When we look at analytics in the past, probably 80% of the branch manager's time was used to search for the numbers, and they spent about 20% of their time driving change. Now, with AMPlify and MyResults, it's about 10% of the time reviewing the analytics and about 90% of the time driving change. It's allowed people to spend more time shoulder-to-shoulder on the floor with their employees; in the trucks and at retail.

George Meriweather also ventured a guess about MyResults' and AMPlify's impact on ADS's performance:

> If you look at our stock price, we're winning. That's because we're doing a good job. Carbonated soft drinks aren't growing, but customers are seeing our product and they're seeing our value proposition. And the only way that's going to happen is if we get shelf space and flawless execution. So I think that's what's driving our success. And I can't believe that these analytics dashboards have not had an impact on our success. I think that our leadership is willing to accept that they have and they've said it: 'you IT guys are doing a great job and it's making a difference.' But in the last few years, ADS has also been engaged in a major continuous improvement initiative that has affected almost every part of the company. So, we can't claim these dashboards as the causal drivers of our performance improvements.

In 2011, ADS had embarked on its own variant of Lean Six Sigma process improvement. While this improvement initiative stressed the elimination of waste, its emphasis on participation from a broad swathe of organizational members and rapid change dovetailed nicely with IT's BA efforts in that it depended on the accurate metricizing of operations. The mutually supportive nature of these two initiatives, in addition to the numerous other factors (including such market-driven forces such as a favorable commodity environment), made it difficult to attribute the ~45% increase in ADS's stock price in 2014 to the BA projects.

Going forward with BA
While IT celebrated these business impacts of their analytics initiatives, there was also a general sense in ADS that their maturity in the BA space was relatively low. Contemplating the definition of BA at ADS, Veronica Du Plessis described it as follows:

> We would argue that MyResults is an analytics solution because we have taken a massive amount of data and combined it to give users a way to quickly and easily see whether there's a problem in a certain area. The user does not have to analyze the data, the system gives them the answer: 'you're thumbs down. You have a problem. You need to go see what the problem is.'

> But we haven't really built an insight that I would raise my hand on as an analytic. I think of an insight as a predictive data point. It has causal factors and it's going to occur because these other three things occurred or because of

probabilities. We have not hit that sophistication. Our elevator pitch of analytics would be 'presenting the right data, to the right person, at the right time.'

In plotting the application development priorities for her group, Veronica listed – by application – the concerns with their current BA solutions, as well as ideas for new metrics and insights.

With regard to MyResults, there was the issue of relatively low adoption, which undermined the technology's impact on DSD's performance. Should IT make an effort to improve usage rates by specifically targeting non-adopters with additional face-to-face training, for example? Or was, as Tyler Fonternel believed, MyResults' adoption really a business issue that required a change in ADS's culture:

My goal is to make everything transparent and clear to people and then its up to the business on how they want to use it. But if we want to grow and evolve as a company, you have to be willing to hold people accountable; that's how you evolve and get better. And we want our business to be fact-based.

Then there was a ~50-point list of new metrics that Larry Short had outlined. These had been generated in collaboration with DSD users and included the desire to develop metrics that highlighted the cost and value implications of various events. For instance, they had calculated an analytic, namely the cost-per-mile, that would allow MyResults to quantify mile overages in dollar terms. Such a conversion might make the metrics MyResults provided even more actionable.

Other ideas on Larry's list for MyResults enhancements included:

- Driver analytics: For example, who are the top five drivers that have been off-route? What percentage of branch over time are they generating?
- Sales analytics: For example, who are the top five sales guys who always oversell their stores, which leads to whole orders being refused? What percentage of haulbacks is attributable to overselling?
- Haulback analytics: For example, how many days of distribution are lost because of haulbacks?

Given the company's goal to keep haulbacks under 3%, George Meriweather felt that more insights on returns would be a valuable to incorporate into the next version of MyResults:

Wouldn't it be cool if I could actually drill into haulbacks and see the routes that the haulbacks were on. And then they might see 'oh, ten of my routes are fine, it's just these two,' and then drill into those and say 'wow, it's these five customers, for example, all ABC Grocers!' Now we have a different problem: 'ABC Grocers locations hate us in this region. Why is that? Let's get that over to National Accounts and do some relationship management.' And magic happens; suddenly the orders are being received or someone was being overly zealous on the scrutiny of the deliveries, or whatever.

While the opportunities to expand MyResults were endless, Veronica wondered how these ideas could be implemented

without undermining the principles of simplicity and action-ability that had guided the design of the application. How could they be implemented given the limited real-estate the application had on the intranet landing page? And wouldn't all these new metrics and drill-down functions encourage users to spend more of their time digging around in the data looking for explanations – and possibly excuses – rather than going out and taking action to improve the numbers?

When it came to AMPlify, the list of issues was focused primarily on addressing system constraints. Kyle Smits summarized opportunities to improve:

The thumbs down indicator is shown if account managers have not sold a case to that store all month. The downside of how that works right now is that the first week of the month all your customers have red thumbs down because you have not visited them yet.

The way [the map] works right now, we look at the case sales for a given store month-to-date and how are you trending month-to-date compared to the prior three months. So, for January 2015, we look at what you've done on average through December, November and October 2014 and give you an up or down sign. The last three months can be misleading though, because the business is seasonal. If I am coming into the summer months, which is our busier time, I am coming out of the cooler months where I did not sell as much, and I am going to be looking better than I probably really am. And the inverse of that is true when I am coming into September, October, November.

We really want AMPlify to be an offline tool, so once account managers have synched their data at the beginning of the day, the application does not need to connect to the server for updates. But we have challenges with that right now. Based on how the app was designed, offline use is limited. If the account manager doesn't refresh every single screen in the app while they are online, they cannot access certain data if they lose their connection. So if the account manager is not on the right screen when a question comes up in conversation with the store manager, there's a good chance they can't get to the correct screen in a timely manner, especially if they're in part of the store where the cellular connection is bad. It's annoying but also embarrassing in front of the customer.

There is also no capability for user-driven customization right now. So, if a branch want to track how the account managers are doing on certain sales incentives that are going on, or promotions for a specific brand – like you need to hit a certain number of cases of MyRootbeer for this month or you need to get to so many customers to order our new coconut water – the tool cannot do that right now.

We provide a feature on the MyResults page, something called Head to Head, where we allow account managers to compare two stores that are on their route. They can specifically say, Store A – where you've sold successfully – and pick your product or package, e.g., 2-litre MyRootbeer, and then compare it to Store B, and see how they're doing head-to-head. But you already have to know which store to use as a benchmark before you come into this screen; it does not tell you where you're having success. But that's something the account manager generally knows intuitively.

Jim Reynolds' ideas for improvements related to AMPlify indicated a desire for the technology to provide account managers with new insights, for example, things they did not already know:

> A big emphasis going forward is going to be on distribution and availability. Over the years, our business has become so much more complex. We've gone from averaging about 120 SKUs per branch, to well over 300. Our goal is to develop a tool in MyDay that when an account manager walks into the account, identifies the biggest opportunities for availability that the account is currently void on. And what we want the system to do is prioritize based upon the performance levels in the stores surrounding that account. It should say, 'John, CoconutAqua 1 liter is your single biggest opportunity at Harry's Buy Rite.' So that when he walks in, a pop-up would come up on screen and say 'okay, today prior to selling anything else into the account, you're #1 objective is to drive distribution and availability of CoconutAqua 1 liter.' So it's making sure that the SKUs that we're putting into the channels of trade – whether suburban, urban, Hispanic – that we're putting the highest quality SKUs into that account based on the demographics and socio-economic backgrounds of those consumers.

This vision of sales analytics was consistent with the direction in which Tyler Fonternel saw BA going in ADS, namely, to incorporate more consumer data, including unstructured data from social media:

> As we go forward we want to look at Nielsen type data; point of sale data that comes from the retail customers directly, loyalty data, etc. Insights around customer likes and dislikes and tons of information from social media, Facebook. That is the next level of using analytics to drive the right facts to the business. That is the direction we want to go. The challenge is doing that analytic work to figure out what the data needs to be and how to present it back to people. I see that as a continual evolution and as we get better and better with using data and getting everyone in the company to use it properly, analytics will be essential to driving business in the company. So, that's kind of the goal.

With the voices of her colleagues in her head, Veronica assembled her spreadsheet of project ideas. For each project idea, she entered weights that represented priorities along numerous decision-making dimensions, including the objectives of BA at ADS. In this way she hoped to develop a well-reasoned list of project priorities for her upcoming strategy meeting.

Notes

1 The beverage industry used cases as its primary unit of measure for volume. A 'hard case' represented 24 8-oz servings or 16 12-oz cans. Other package formats (e.g., liter or gallon bottles), were converted into 192-oz case equivalents referred to as 'converted cases.'

2 Gamification is the application of game mechanics and game design techniques to engage and motivate people to achieve their goals. It leverages people's innate desires to engage in certain behaviors, including competing, collaborating and goal-seeking.

About the author

Ulrike Schultze is Associate Professor in Information Technology and Operations Management at Southern Methodist University. She also has a visiting appointment at Lund University, Sweden. Her research explores the complex relationship between information technology and work practices. She has studied the work practice implications of knowledge management technology and of Internet-based self-service technology, as well as the implications of social media technologies, specifically the virtual world Second Life, for identity work. More recently, she has been exploring issues related to digital innovation and the sharing economy. She frequently relies on multi-method research designs, which include ethnographic observations, interviews and surveys. Her research has been published in leading IS journals, including *ISR, MISQ, EJIS, JIT* and *I&O*. She has served on numerous journals' editorial boards including *MISQ, ISR, EJIS, JIT* and *I&O*, and is currently an SE at *JAIS* and *I&O*. She has also taken on significant leadership roles in AoM-OCIS, IFIP 8.2, ECIS 2014 and ICIS 2015.

Appendix A

IT organizational chart
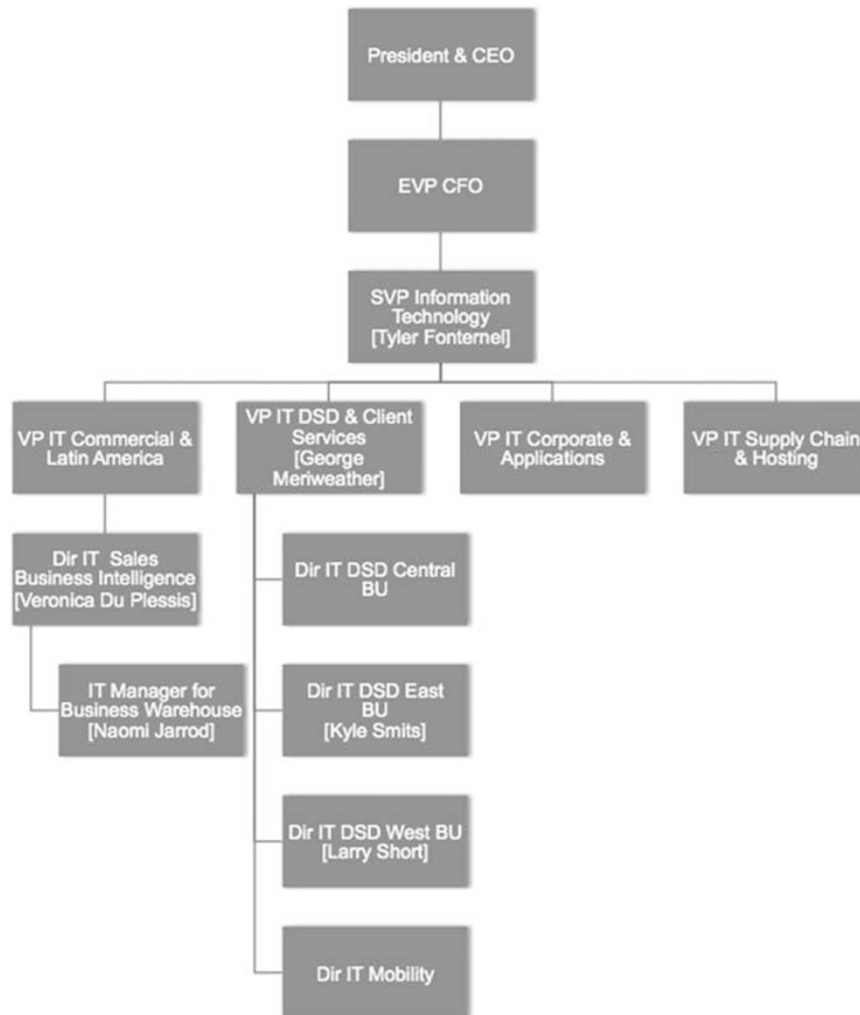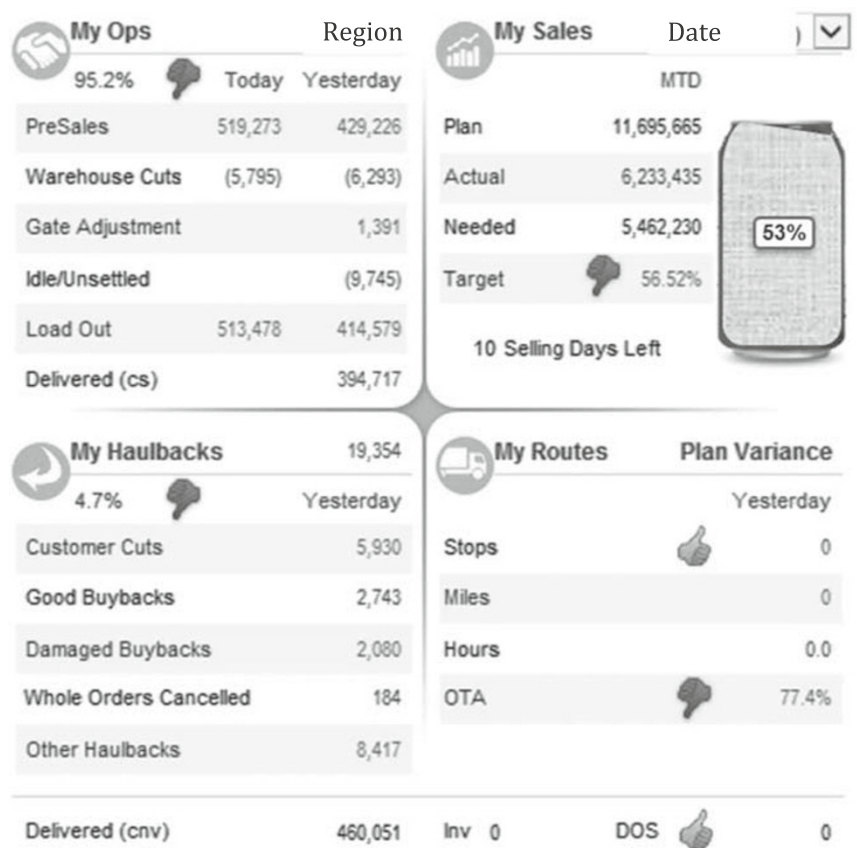
Appendix B

Brick handheld (for route manager)

Appendix C

Daily flash

Daily Loadout

Region	LoadOut
MID-CENTRAL	)1,636 CS
MID-SOUTH	)2,232 CS
PLAINS	)7,854 CS
SOUTHEAST	25,226 CS
Result	16,948 CS
METRO NY/NJ	53,974 CS
MICHIGAN	51,516 CS
OHIO VALLEY	30,388 CS
Result	55,878 CS
NORTHWEST	72,445 CS
SOCAL - NEVADA	34,650 CS
Result	)7,095 CS
SOUTHERN TEXAS	34,426 CS
TEXOMA	17,076 CS
Result	11,502 CS
Result	21,423 CS

MTD Sales

Region	MTD Sales	Budget	% Effective	% Effective (CM-1)	% Effective (CM-2)
MID-CENTRAL	,858	,806	.19	'.29	i.78
MID-SOUTH	,527	,501	.51	l.76	l.20
PLAINS	,666	,804	.65	l.03	'.39
SOUTHEAST	,541	,833	.66	l.77	!.34
Result	,592	,944	.53	i.27	l.02
METRO NY/NJ	,523	,957	.45	'.36	.64
MICHIGAN	,268	,087	.75	l.78	l.38
OHIO VALLEY	,196	,795	.54	!.41	!.46
Result	,987	,840	.53	l.39	!.03
NORTHWEST	,234	,962	.68	l.35	'.70
SOCAL - NEVADA	,203	,415	.24	.75	l.29
Result	,436	,378	.72	l.38	!.14
SOUTHERN TEXAS	,396	,373	.49	!.12	.54
TEXOMA	,841	,398	.24	l.04	l.06
Result	,236	,771	.09	l.84	!.49
Result	,251 :	,933	.80	.05	.01

Appendix D

Screenshots of myresults (v2)

My Ops	Region	Today	Yesterday
95.2% 👎			
PreSales		519,273	429,226
Warehouse Cuts		(5,795)	(6,293)
Gate Adjustment			1,391
Idle/Unsettled			(9,745)
Load Out		513,478	414,579
Delivered (cs)			394,717

My Sales	Date	MTD
Plan		11,695,665
Actual		6,233,435
Needed		5,462,230
Target 👎		56.52%
10 Selling Days Left		53%

My Haulbacks	19,354	Yesterday
4.7% 👎		
Customer Cuts		5,930
Good Buybacks		2,743
Damaged Buybacks		2,080
Whole Orders Cancelled		184
Other Haulbacks		8,417

My Routes	Plan Variance	Yesterday
Stops 👍		0
Miles		0
Hours		0.0
OTA 👎		77.4%

Delivered (cnv)	460,051	Inv 0	DOS 👍	0

My ops

- *Delivered percentage*: Percent of load out cases that were delivered. Ratio of total delivered cases divided by total load out cases. Target threshold is 97% or better
- *Pre-sales*: Sum of the cases pre-sold by the Account Manager to be delivered on the selected date
- *Warehouse cuts*: Sum of the cases cut by the warehouse during the load-out process, expressed in *Hard cases*
- *Gate adjustment*: Sum of total cases added at gate check-out, and cases added for house/hot shot sales, expressed in *Hard cases*
- *Idle/unsettled*: Sum of the cases dispatched for delivery, but where route(s) did not go out, or where route(s) did not completely settle
- *Load out*: Sum of total cases dispatched and checked out on the selected date, expressed in *Hard cases*
- *Delivered (cs):* Sum of total cases delivered, expressed in *Hard Cases*

Sales

- *Plan*: Monthly budget cases to meet Annual Operating Plan expressed in *Converted cases*
- *Actual*: Sum of total cases delivered month to date, expressed in *Converted cases*
- *Needed*: Sum of total cases needed (outstanding) necessary to meet total Plan cases, expressed in *Converted cases*
- *Target*: On-track cases in relation to Plan cases, expressed as a percentage
- *Selling days left*: Total number of selling days left in the month, does not include Saturday or Sunday

My haulbacks

- *Haulback percentage:* Percentage of total haulback cases. Ratio of total haulback cases divided by total load out cases. Target threshold is 3% or better
- *Customer cuts:* Sum of total cases cut by the customer at the point of delivery, expressed in *Hard cases*. (i.e., Changes to orders made by customer)

- *Good buybacks*: Sum of total full case good buyback cases returned from the customer, expressed in *Hard Cases. These are* cases that can be returned to inventory
- *Damaged buybacks*: Sum of total full case that are returned by the customer but that are damaged and can therefore not be returned to inventory, expressed in *Hard cases*
- *Whole orders canceled*: Sum of total cases that represent complete orders that a customer refused to accept, for example, because the driver missed time window, expressed in *Hard cases*
- *Other haulbacks*: Sum of total cases for all other haulback case scenarios, for example, soft drinks to replenish vending machines on the driver's route that were not ordered, expressed in *Hard cases*
- *Delivered (cnv):* Sum of total cases delivered successfully measured in *Converted cases* (cnv)

My routes

- *Stops*: difference between planned delivery stops (as optimized by Route Manager) and actual delivery stops. Positive or negative is fail. Target threshold is zero variance. Negative = Missed stops; positive = stops over plan
- *Miles*: difference between planned delivery miles (as optimized by Route Manager) and actual delivery miles. Positive = miles over plan, negative = miles under plan. Target threshold is < = 10 miles per route
- *Hours:* difference between planned delivery hours (as optimized by Route Manager) and actual delivery hours. Positive = hours over plan, negative = hours under plan. Target threshold is < = 5% of planned hours
- *OTA (on-time and accurate)*: total number of deliveries with correct quantities delivered on the scheduled date divided by the total number of deliveries. Target threshold is 90% or better
- *Inv*: current total finished goods and purchased product for *all* inventory storage locations
- *DOS (Days of supply):* total number of days of inventory on hand. Measured as total inventory on hand divided by the average daily shipment

Appendix E

Drill Down into Haulbacks

Region △	Total △	Haulbacks ▽		% ▽	Customer Cuts ▽	Good Buybacks ▽	Damaged Buybacks ▽	Whole Orders Cancelled ▽	Other Haulbacks ▽
1		4,483	👎	4.1%	1,043	763	202	0	2,475
2		3,136	👎	3.3%	621	843	479	74	1,119
3		6,445	👎	6.1%	2,555	575	749	110	2,456
4		5,290	👎	5.2%	1,711	562	650	0	2,367
Total		19,354	👎	4.7%	5,930	2,743	2,080	184	8,417

Screenshots of amplify