A PRACTITIONER'S GUIDE TO BUSINESS ANALYTICS: Using Data Analysis Tools to Improve Your Organization's Decision Making and Strategy

6

Developing Competitive Advantage

"Plans are worthless. Planning is essential."

—Dwight D. Eisenhower

We want to develop an analytics plan as part of the overall business strategy. This plan will organize our analytics needs, identify our analytics opportunities, and provide a strategy for competing on analytics. Corporations regularly invest resources into reorganizing. Part of rethinking the next organizational structure should include a retrospective on past analytics-based decisions, how the reorganization could improve decision making, and how reorganization redefines the business analytics plan.

A business analytics plan needs to be thorough enough to accommodate the pace of decision making and flexible enough to address unanticipated needs. By leveraging their experience, analytics-based decision makers, on-topic business analytics leaders, and expert leaders can anticipate certain types of needs and prepare the corresponding parts of our infrastructure. The pace of decision making does not allow us the luxury of delaying planning until we ascertain all of the information that is wanted. We need to be proactive. Most of the time, we can infer some of the required preparation and thus reduce the hazardous lag in reaction time. Planning facilitates avoidance of rushed or unnecessary analyses.

Approach for Identifying Gaps in Analytics

The basic approach is to derive current needs; evaluate current capabilities; and juxtapose the two. Deriving current needs is easier to envision once we have seen it done. Our approach is to follow the business flow. We can follow money, customers, products, or services. Once we inventory our needs, we can evaluate capabilities by counting the BAs (Business Analysts) and BQs (Business Quants), assessing their leadership and resources, and evaluating the approach of the decision makers.

Strategy

The overarching objective is to integrate business analytics into the business strategy. Laursen and Thorlund explain it thusly: "If a company does not use information as a strategic asset, it will not, in the strategic implementation plans, have descriptions of how the competitive advantages should be gained via the use of information. If a company does use information as a strategic asset, then next to the objectives of the strategy it will also provide directions of how the objectives should be reached via the use of information."[1] Our strategy incorporates the use of analytics to improve our performance in the marketplace.

Protecting Intellectual Property

Keeping proprietary information secret is part of our competitive advantage. We want to keep our business analytics plan, strategy, tactics, and technology to ourselves. Back in the 1990s, Fair Isaac demonstrated its modeling techniques worked for predicting loan risk. This helped it increase sales in the short run. In the long run, they were rewarded by their clients, who then built their own in-house analytics groups and lessened their dependency on Fair Isaac.[2] The technology was not that advanced, yet some of these banks needed this nudge to take the next steps.

This chapter will blend the ideas from the first five chapters and lead into the tactical ideas in the next six chapters. We begin by discussing how to assess our corporation's information needs. Next we will discuss evaluating the corporation's analysis capabilities. We end with suggestions for accelerating innovation and bringing about changes in analytics and by analytics.

Section 6.1 Triage: Assessing Business Needs

We want to assess the information needs of the corporation. One approach is for a business analytics leader, working in concert with the senior leadership, analytics-based decision makers, expert leaders, and other analytics professionals to inventory the data analyses needed to support business decisions. Many corporations already have a company scorecard and a set of critical tracking reports. These are good places to start because they are close to the corporate strategy. We can usually find ways to improve these tools and thereby develop trust. We want to search further afield for projects with high ROI (return on investment) or "killer applications." These applications represent the most economically impactful decisions that need the support of data analysis.

Process Mapping of Analytics Needs

One route to mapping analytics opportunities is to chart the customer flow. Figure 6.1 outlines a basic customer flow, with which most industries can relate. We have embedded a number of analytics opportunities, which can directly support decisions and provide business insights.
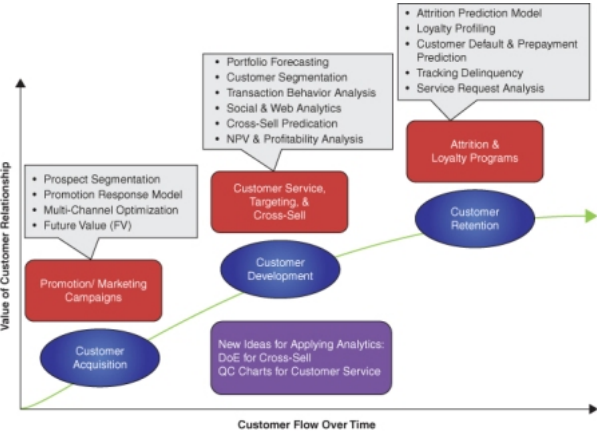

Figure 6.1 Analytics along customer flow [3]

As a second example, Figure 6.2 provides a customer flow specific to an automobile loan portfolio. This illustrates the location in the customer flow where we should use various data analyses to support business decisions.

Another more enterprise-wide approach is to build a value diagram as depicted in Figure 6.3, outlining the flow of value within the corporation.

In Table 6.1, we inventoried some of the business problems. We mapped them from the basic customer flow in Figure 6.1 to the anticipated analytics needs. We characterized these analyses by the parameters of value-add, desired accuracy, and desired reliability. We added the last two rows as placeholders for general business needs such as exploratory data analysis or addressing questions "in the moment." We want to have contingencies for unexpected needs.

Judging accuracy and reliability leads to thinking through how to better design the solutions. We need to focus more on supporting the most important decisions. Within the confines of the desired accuracy, we need to consider how to make novel problems more routine and how to better leverage the infrastructure we have on hand.
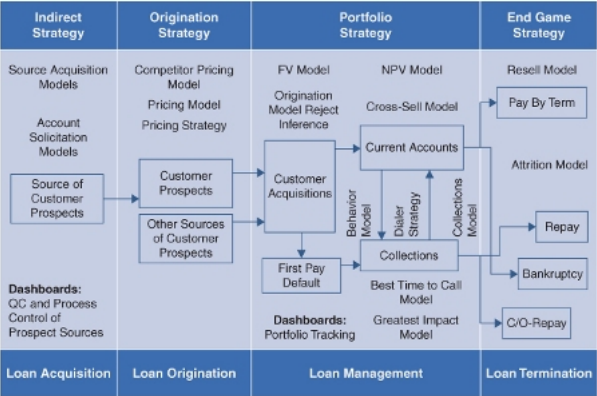
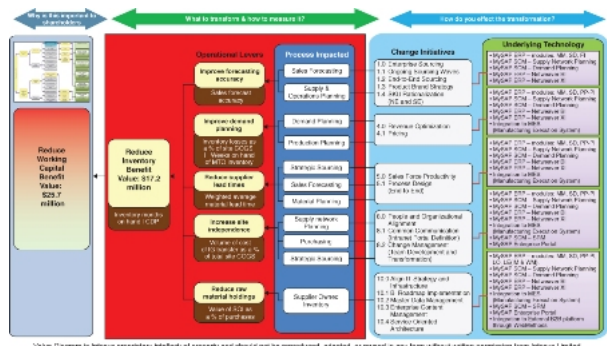**Figure 6.2** Mapping customer flow for an automobile loan portfolio

Figure 6.3 Value diagram

Table 6.1 Analysis Inventory

Analysis Problem	Value-Add	Desired Accuracy	Desired Reliability
Prospect Segmentation	High	High	High
Promotion Response Model	High	Medium	High
Multi-Channel Optimization	Medium	Medium	Medium
Future Value (FV)	High	Medium	High
Support for Customer Acquisition Business Decisions	Varies	Varies	Varies
Support for Customer Development Business Decisions	Varies	Varies	Varies

Innovation: Identifying New Killer Apps

We want to be vigilant in finding and developing new killer applications that will build competitive advantage. This is the entrepreneurial aspect of the Business Analytics Leader's role. We apply the concepts of Real- Win-Worth. Is it Real; can we Win; and is it Worth doing?

Introducing the new, the faster, the stronger is probably the most difficult undertaking for a business analytics team. While it is the most impactful, an important aspect of innovation is that some breakthroughs do not happen suddenly. We need to make incremental technical advances—each of which can be a temporary economic failure—until we reach the coveted final one that generates wealth. The Information Age should further motivate the need for innovative solutions to our business problems. In our all-out effort to apply whatever means are available, we want to combine these strengths:

1. *Knowledge of the potential data*. It is important to possess a mastery of the current data.

2. *Expertise in data collection techniques*. An often missing component in corporations is expertise in how to properly collect the data. We will discuss the basics in Chapter 10, and that should provide some insight into the nature and value of statistical data collection.

3. *Business savvy and an understanding of our business*. We need to leverage our understanding of how the business functions, and fully comprehend the context of the business problem.

4. *Competitive intelligence*. Part of planning involves competitive intelligence regarding rival analytics capabilities.[4] This, incidentally, is notoriously prone to bias from embellishment and a lack of understanding.

5. *Cross-industry experience*. Cross-industry experience is particularly invaluable for hunting killer apps. This facilitates considering applications, which are more common in completely different industries. The problem in getting these applications accepted still remains because industries focus on how they are different from each other. Similarly, knowledge of other industries supports a fresh view of our business, a phenomenon that encourages reevaluation of long-held assumptions.

6. *A broad repertoire in statistical techniques*. Such a range of techniques is invaluable, though often lacking. Most corporations tend to overuse their most popular data analysis techniques—as mentioned in Section 4.1, "Two-Trick Pony." Part of embracing the serendipity of statistics is to experiment with all of the statistical tools at hand, thus making it important that we have most of them at hand. We should consider the types of statistical problems natural to certain types of decisions.

7. *Advanced training in statistics*. Advanced statistical training is critical for recognizing business problems that can be solved using statistics.

Scrutinizing the Inventory

We want to run analytics like a profit center. For each analysis, we should consider its value-add to the business and strive to estimate the ROI. Our inventory is likely to be dynamic, so this can be an ongoing challenge.

We experience a continuum of business needs spanning from high-value, surgically precise one-off analyses at one corner to quick-and-clean mass-produced analyses providing ballpark estimates at another corner of the plane.[5] For Table 6.2, we want to consider the desired rigor, amount of problem knowledge, and amount of analytics expertise for the inventory from Table 6.1. Also, we may want to group similar analytics problems and think about who should review the various analyses. We have added two new analyses to this table: DoE for Cross-Sell Prediction and Quality Control Charts for Customer Service, both from Figure 6.1. Today, these types of analyses are largely underutilized in business.

Table 6.2 Scrutinizing the Inventory

Analysis Problem	Degree of Rigor	Problem Knowledge	Analytics Expertise	Groups
Prospect Segmentation	Medium	Medium	Medium, Quadrant IV	Methodology Group
Promotion Response Model	High	Medium	High, Quadrant IV	Modeling Group
Multi-Channel Optimization	High	Medium	High, Quadrant IV	Modeling Group
Future Value (FV)	Medium	Low	Medium, Quadrant III	Modeling Group
Support for Customer Acquisition Business Decisions	Varies	Varies	Varies	"In The Moment"
Support for Customer Development Business Decisions	Varies	Varies	Varies	"In The Moment"
DoE for Cross-Sell Prediction	High	Medium	High, Quadrant IV	DoE Group
Quality Control Charts for Customer Service	Medium	Low	Medium, Quadrant III	QC Group

In scrutinizing our inventory of business needs, we can:

1. Judge the required problem knowledge, value-add, and analytics sophistication needed—today and during the life of the analysis.

2. Group together similar analyses to build them more efficiently.

3. Eliminate unnecessary analyses.

Ideally, for every analysis we want to be able to demonstrate how we will use the results. The corresponding trade-off is between avoiding unnecessary analyses and missing those opportunities, which lack "pre" demonstrable benefits. The value-add of an analysis can be relative to its accuracy and reliability. We may need to choose between many less-accurate analyses or a few more-accurate ones.

By grouping together similar analyses, we can make similar business problems more routine, and possibly build the infrastructure needed for mass production. This can help lower the overall cost of analytics and, as a by-product, improve accuracy and reliability.

Someone, presumably **a business analytics leader, needs to make the difficult decisions involved in not analyzing everything**. There are unnecessary analyses, the quantities of which vary dramatically by corporation. The typical reasons for these are (1) we cannot solve the business analytics problem well enough to justify the resources, (2) we do not have the data or other resources available to undertake the analysis, and (3) the analysis cannot add value because it will not influence the decision, which may have already occurred—"toy analyses." We will define a toy analysis as one that must fit a conclusion. The purpose of toy analyses is to lend credibility to a committed opinion-based decision. Hence, performing data analysis will not add value to a past decision. Identifying toy analyses[6] might force senior management to cull them or at least reduce their drain on resources.

Assigning Rigor and Deducing Resources

The next level of the plan is to assign rigor and deduce required resources. We should be able to place the business problems in the correct quadrants in Figure 6.4.
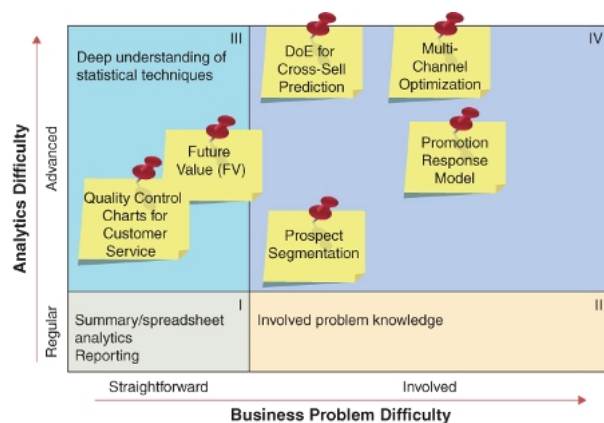
Figure 6.4 Business problems (high-hanging fruit)

The position in which we post the analysis will vary with the desired accuracy and reliability. We acknowledge that it is difficult to accurately place analyses; that is not the point of this graph. The graph is intended purely to help us to think strategically.

Now we will repeat the last two steps again using select business problems from the automobile loan portfolio in Figure 6.2.

The challenge is in assessing the amounts of accuracy and reliability needed to economically solve the business problems. We often see the waste of too much rigor allocated to some projects and both the risk and waste [7] of too little rigor allocated to other projects. Matching the right amount of time and thoroughness to the business problem will have the greatest impact. This is especially difficult to gauge for less familiar business applications. Getting the rigor right requires training and experience. Even then, this can be more time-consuming and expensive than just providing ample rigor.

In Figure 6.5, we post the business analytics problems on the capabilities chart. We expect that the originations model will need to be built to exacting standards. This model is the critical gatekeeper for managing risk by predicting it.

Directors of analytics approach rigor based, more or less, on their degree of quantitative training. Those managers with less quantitative training find it more difficult to judge the right amount of rigor needed to provide the most value. Their best option is to delegate these decisions. They tend to be too conservative in assigning rigor—less is more. On-topic leaders are even more conservative, adhering to the "more is less" maxim and thereby minimizing the risk that the analyses will be inadequate. On-topic leaders are not stingy with rigor. They are stingy with assuming superfluous risk. They are experts at business analytics and, for their analytics teams, rigor is less expensive anyway. It is thus conservative for them to lather on too much as opposed to too little rigor. One way to think about this is that every decision has a probability of failure. As we reduce rigor, the probability of a poor decision rises. For 100 decisions with a failure probability of 0.1, we expect 10 lousy decisions.

Table 6.3 Automobile Loan Analysis Inventory

| Analysis Problem	Value-Add	Desired Accuracy	Desired Reliability
Source Acquisition Models	High	High	High
Account Solicitation Models	Medium	Medium	Medium
Competitor Pricing Model	High	Medium	High
Pricing Strategy	Medium	Medium	Medium
QC and Process Control	High	Medium	High
FV Model	High	Medium	High
Originations Model	High	Medium	High
Portfolio Tracking	High	Medium	High
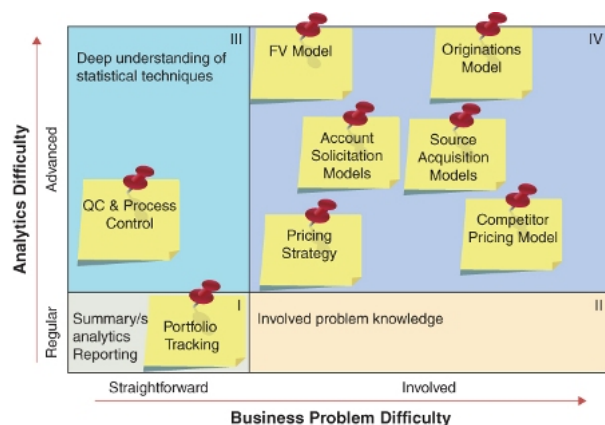
Figure 6.5 Automobile loan business problems (high-hanging fruit)—Loan business problems (high-hanging ftruit)

Finally, if assessing the needed rigor is so difficult, then we recommend building an infrastructure, which will lower the cost of rigor—and lower costs in general through economies of scale. We wish to identify those situations where we can build models in assembly-line fashion rather than hand-crafting each one from data collection onward. [8]

Now that we have reviewed our data analysis needs on the way to developing an analytics plan, the next step is to count the practitioners against the identified needs.

Section 6.2 Evaluating Analytics Prowess: The White-Glove Treatment

We want to discuss a more thorough treatment of how to evaluate our capabilities. We want to evaluate how well analytics supports better decisions. We need to address whether the decision makers have access to the facts, whether the business strategy is fully leveraging data analysis, and whether the facts are adequate to support decision making and the business strategy. We want to evaluate the leadership and the infrastructure. We want to know how well the analytics professionals can respond to demands. Are we conducting postmortems on our analytics performance and what do these autopsies reveal?

We discuss evaluating analytics prowess in six areas:

1. Leading and organizing analytics within the corporation

2. Acculturating analytics into the decision making, corporate culture, and business strategy

3. Evaluating decision-making capabilities

4. Evaluating technical coverage

5. Executing Best Statistical Practice—applying Statistical Qualifications, Statistical Diagnostics, and Statistical Review

6. Constructing effective building blocks to support analytics—Data Collection, Data Software, and Data Management

Leading and Organizing

We need to evaluate the strength of the leadership and the appropriateness of the current organization as discussed in Chapters 2 and 5 .

The most important ingredient for implementing change is a strong, confident advocating leadership. The typical concerns are around having enough analytics professionals, an efficient structure and adequate leadership, and an effective location—most likely with some centralization.

For a large corporation, we are likely to want an enterprise-wide advocate, a business analytics leader, a handful of expert leaders, an enterprise-wide analytics group, and a plethora of analytics-based decision makers. As mentioned in Chapter 5, it is important to have expert leaders oversee and provide visible leadership for the three pillars discussed in Chapters 7 to 9 : Statistical Qualifications, Statistical Diagnostics, and Statistical Review, and the three building blocks discussed in Chapters 10 to 12: Data Collection, Data Software, and Data Management.

In assessing the organization, we need to verify that information is free flowing and without too many unwanted additives or impurities.

Progress in Acculturating Analytics

In Section 6.1, we discussed integrating analytics into the business strategy. We want to evaluate the degree to which our corporation makes solid analytics-based decisions (Chapter 3), the effectiveness of our decision making, and the extent of our analytics-driven culture (Chapter 4). We can identify where mistakes are occurring and how well we are functioning within each of the four acts described in the analytics-based decision making process. We need to think through how we make decisions and how we incorporate data analysis into decision making. These are the hard questions.

We need to evaluate the acceptance of analytics in the corporation. This includes measuring how well the corporation converts analytics into industry knowledge. We may need to train the staff in a manner similar to Six Sigma training.

Evaluating Decision-Making Capabilities

We need to identify the largest decision makers, then consider their analytics sophistication and training needs. We want to understand their analytics usage, their comfort level, their humility in accepting new contradictory information, and their analytics knowledge. We want to help decision makers understand Statistical Diagnostics (Chapter 8) and better wield analytics. We can identify the types of analyses that correspond to poor decision making. We might expect our corporation's best decision-making performance to occur for business problems in the lower left corner of Figure 6.6.

Evaluating Technical Coverage

As corporations expand their team of analytics professionals, they grow their capabilities as illustrated in Figures 6.6 to 6.9. Let the stepped areas in the bottom left corner represent a corporation's technical reach. (These graphs are for illustrative purposes; in truth, there is a great deal of synergism that is difficult to capture in these simple step-by-step portrayals.) We can partition the quadrants as finely as we need to look for gaps. We need to think about how to keep the practitioners at optimal productivity. We want to ensure that we are applying the full depth and breadth of our statistical capabilities. [9]

Today, we cannot imagine a corporation surviving very long without the basic analytics capabilities afforded by adding business analysts, as illustrated in Figure 6.6. Most corporations took this initial step long ago and the productivity of the business analysts has risen dramatically.

Today, we cannot imagine certain corporations in certain industries surviving very long without the capabilities provided by business quants, illustrated in Figure 6.7.

Tomorrow, it will be difficult for corporations to survive without more sophisticated decision makers. Analytics-based decision makers will unleash the practitioners, facilitating greater productivity and higher innovation as illustrated in Figure 6.8.

The final step in covering analytics needs is to add an on-topic business analytics leader. Figure 6.9 shows the resulting coverage.

Adding an enterprise-wide advocate does more to spread analytics across the corporation. Centralizing at least part of the analytics practitioners can further facilitate these benefits.

Executing Best Statistical Practice

We want to evaluate our ability to execute Best Statistical Practice when solving business analytics problems. In Part II of this book (Chapters 7 to 9), we will discuss the three pillars for Best Statistical Practice—Statistical Qualifications, Statistical Diagnostics, and Statistical Review. We want to confirm that a business analytics leader or an expert leader is overseeing the needed Statistical Qualifications, Diagnostics, and Review so that our capabilities will meet the needs of our current and future business problem inventories.
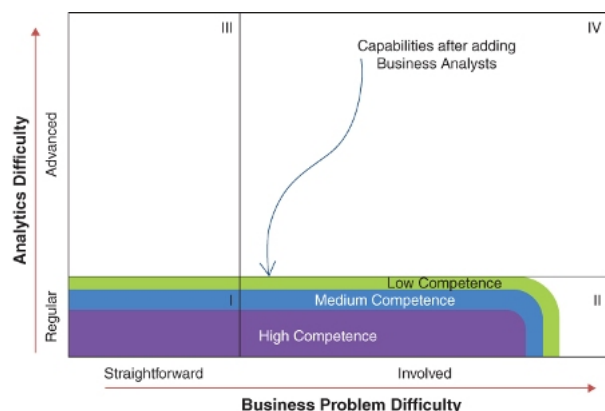

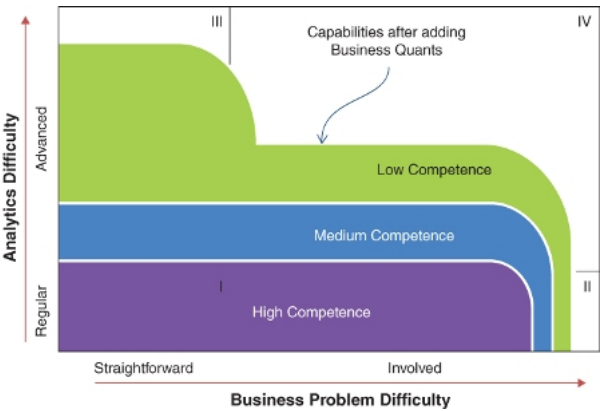**Figure 6.6** Analytics capabilities after adding business analysts

Figure 6.7 Analytics capabilities after adding business quants
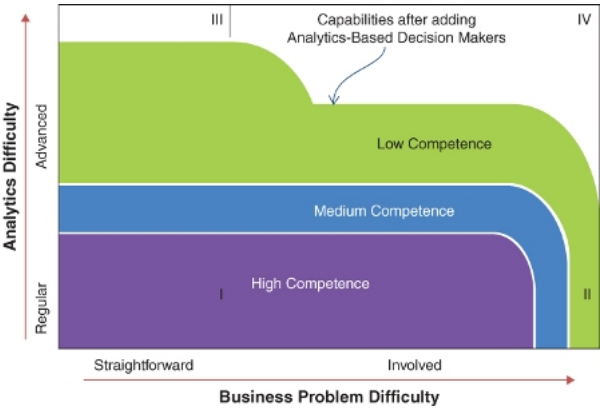
Figure 6.8 Analytics capabilities after adding analytics-based decision makers
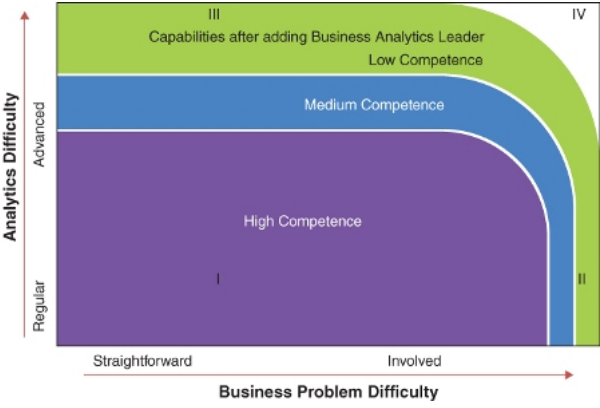
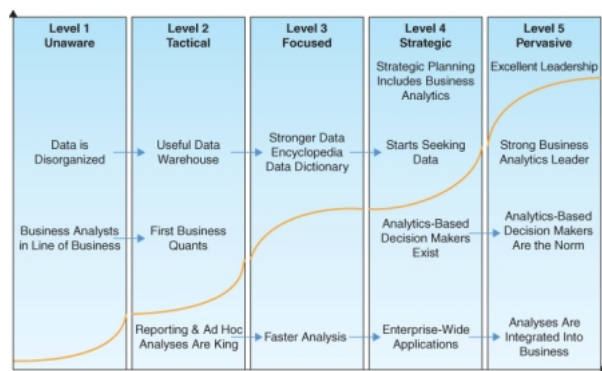**Figure 6.9** Analytics capabilities after adding a business analytics leader

Figure 6.10 Business analytics maturity model

We will discuss Statistical Qualifications in Chapter 7. The Statistical Qualifications among our analytics professionals determine our corporate capabilities. We need analytics professionals with both technical skills and soft skills.

In Chapter 8, we will outline Statistical Diagnostics and discuss a few of them. There are many techniques for measuring performance—the accuracy and reliability of a particular data analysis. We will discuss Statistical Review in Chapter 9. This is an opportunity to perform a "self-diagnostic" of how well we are solving business analytics problems.

Constructing Effective Building Blocks

We want to evaluate three critical building blocks that support analytics. In Part III of this book (Chapters 10 to 12), we will discuss Data Collection, Data Software, and Data Management. We want a business analytics leader or an expert leader to evaluate the extent to which these three building blocks are going to meet our current and future statistical needs. We want to know how much value is lost in (1) going without data that we can collect, (2) compensating for insufficient software, and (3) struggling with data or computer support that is not customer-centric. It is not unusual for inefficiencies to consume 20% to 60% of productivity.

Business Analytics Maturity Model

We end this section by presenting a Business Analytics Maturity Model, Figure 6.10.

✶ ✶ ✶

Section 6.3 Innovation and Change from a Producer on the Edge

"Innovation comes from the producer—not from the customer."[10]

—W. Edwards Deming

"Nothing changes at the center. Change only occurs at the edges and works its way in."

—Russell Banks[11]

Innovation tends to come in two flavors: (1) sudden and unexpected, and (2) planned, yet doggedly obtained. Innovation has built new corporations and revived old ones. It enables an established corporation to shed its old skin and adapt. We want to employ analytics to promote innovation, and we want to innovate in analytics as well. Analytics thrives in a change-based environment. Such an environment requires humility, the courage to embrace the new, and the wisdom to foster the freedom to create.[12] In this section, we discuss the importance of speed, continual improvement, and ingredients for accelerating the offense.

Emphasis on Speed

Speed is the thing.[13] We prefer a team that has a relative speed advantage over other virtues. Importantly, speed creates time that can, in turn, be spent developing bigger advantages—such as greater speed. Many decisions must be made quickly, and so reaction time can be critical. We want a team that can react quickly and can anticipate the needed facts prior to decision making. This does not mean that we need to sprint back and forth from our desk all day. Simply put, we need to think about how we make a viable analytics-based decision faster.[14]

The primary solution to obtain greater speed is an improved infrastructure. We want a trained organized team with the software and hardware infrastructure to mass-produce, react quickly, and anticipate as much as possible. That is why we wrote three chapters on Statistical QDR and three more on the Data CSM.

Continual Improvement[15]

Integral to our strategy is to create competitive advantage by continually improving our ability to make analytics-based decisions. Building this competitive advantage involves a long-term investment in capabilities for making decisions faster, better, and less expensive. We want to integrate continual improvement into every project. We have already discussed a few of the important topics for supporting continual improvement: Leadership, Specialization, Delegation, and Incentives (Chapter 2); analytics-based decision making (Chapter 3); the corporate culture (Chapter 4); and organization and leadership (Chapter 5). As mentioned in Chapter 3, there can be a fifth act in the analytics-based decision making process, which is to prepare for future business problems by learning from the present one at hand.[16] This fifth act is covered by Statistical Review (Chapter 9), and there are no new causes of death.

The thrust of continual improvement is to learn from doing. Based on past decisions and analyses, we want to continually improve our infrastructure to accommodate greater analytics breadth, better solutions, and more speed. The downstream benefits include less expensive rigor, more flexibility, faster turnaround (speed), and greater breadth in addressing business needs.[17] Naturally, we want to emphasize making those improvements that will produce the greatest ROI. This usually involves leveraging economies of scope and scale. Continual improvement is an ongoing commitment, for which we may need to ring-fence resources. We cannot allow the problems of the day or short-term incentives to interfere.

In particular, Statistical Review, as discussed in Chapter 9, is *the* major force in continual improvement. Statistical Review not only enhances and ensures the quality of the current decision but also looks forward to improving future decision-making performance. In some instances, we perform autopsies to find out what went right and what went wrong. This is about more than just checking the data and the data analysis. The focus should be on the quality of the solution for the business problem and the analytics-based decision. As we discussed in Chapter 1, the data analysis is a technical problem within the business problem. We need to review the entire context including the broader business needs: Timeliness, Client Expectation, Accuracy, Reliability, and Cost—Best Statistical Practice. We must review how well we solved this problem within its constraints and provide that as feedback to improve the infrastructure.

Another point we wish to make is that some problems require incremental gains. Before we can build an economically powerful super model or business strategy, we may need to go through several generations of mediocre ones. Worst case, we might need to fail in a very public manner—to fall forward.

Accelerating the Offense—For Those Who Are Struggling

Some corporations are on course to take generations to acclimate to the Information Age, a delay that puts them on a path to oblivion. These corporations need to take thoughtful aggressive steps beyond just throwing resources at the problem. There are likely to be many corporations that fail to execute. We need to genuinely understand how the "machine" works if we are going to speed it up. Most statistically struggling corporations are psychologically predisposed to gently add analytics reactively and this timidity can be fatal. Again, we need to be aggressive. With the new and/or unknown, there can be a psychological draw toward a moderate though inadequate approach.

A good first step is to look at the big picture. As discussed, we need to review how analytics fits into the business strategy, assess our business needs, and evaluate our capabilities. From here on, we can rethink our overall approach. If we are struggling with incorporating analytics, then we will most likely want to reorganize—an application of the "gale of creative destruction" as introduced by Werner Sombart. As part of our restructuring, we should consider (1) bringing in new talent, (2) erecting an improved infrastructure, (3) training our staff about analytics, and (4) reviewing how we execute the four acts in analytics-based decision making.

Bringing in new talent can completely change the dynamic. One aggressive option is to hire an intact team of analytics professionals—an enterprise-wide advocate, mid-level advocates, analytics-based decision makers, an on-topic business analytics leader, expert leaders, and a cadre of business analysts and business quants. We want to hire in a group that thinks alike and can work well together. They are more valuable if they already know each other—especially the decision makers and the practitioners—as this preserves their culture. We want this new group to report high in the corporate tree, and we would eventually want to circulate the members all over the corporation.

A completely different tack is to bring back talent that left when we were not ready to change. They already know the lay of the land and what we need to do to improve our analytics.

Now for what we need to stop doing: we tend to repeatedly hire and promote "ourselves"—that is, professionals with similar backgrounds. So those with little statistical training hire and promote those with, at best, slightly better statistical training.[18] Similarly, if we are in an industry that is weak in analytics, then we need to stop lowering our analytics standards to (1) be comparable with industry norms, and (2) accommodate our appetite for more of what we already possess—industry knowledge. More industry knowledge adds far less value in an industry that has a greater need for analytics. In this situation, we should recruit from other more statistically aggressive industries and look for quant qualifications and certifications.

With regard to infrastructure, it is a Herculean task to take the data analysis that supports decision making all the way from a cottage industry to mass production. While addressing needs as they come in the door, we need to build large-scale investments that emphasize speed. The initial resources to build additional infrastructure could come from postponing or canceling certain other analyses.

Improvements in infrastructure will generate greater productivity that we can shrewdly reinvest in generating more productivity. We need to ring-fence this newly created resource reserve and regard "unfinanced" unanticipated in-the-moment spending as deficit spending. We should continue to reinvest with a focus on creating efficiencies first and then making the results more reliable.

Another option for acceleration is to employ wholesale training of the staff—Six Sigma style. We want the larger team to be more comfortable and effective in applying analytics to decision making. The training needs for analytics practitioners will be very different, focusing on leadership and communication. We will discuss training needs further in Chapter 7.

Another way to jump-start our analytics is by starting a review capability. We can begin by only reviewing the company scorecard and a random sample of tracking reports and analyses to see how well our corporation is performing. We may need to house an analytics governance team in the corporate governance arm of the company—an independent and centralized function like legal, compliance, or finance. This facilitates high-level objective reporting.

Acceleration should not be an excuse for losing sight of the details or unknowingly compromising on customer service. Fast does not imply sloppy. Limited resources might mean doing one highly profitable analysis very well or many less profitable analyses in an acceptable fashion. Acceleration depends on the corporate strategy and the economics.

In the next six chapters we will introduce Statistical QDR (Chapters 7 to 9) for improving decision making and data analyses, and Data CSM (Chapters 10 to 12) for supporting analytics.

Notes

1. *See Business Analytics for Managers: Taking Business Intelligence Beyond Reporting* by Gert Laursen and Jesper Thorlund ((2010).

2. The alternative of not explaining the technology might have been worse.

3. At some corporations, CRM failed during this phase because they struggled with adequately mapping the analysis requirements and supplying all of the analyses needed.

4. This information should be taken with a bucket of salt.

5. Most of the activity lies with either the one-off analyses or the mass-produced ones.

6. A hazardous proposition.

7. Analyses performed with too little rigor will either underperform or be of no value. We are missing many opportunities where rigor could make a difference. Some of these are instances where the corporation needs an analytics solution to extricate itself from the Decisive Circle mentioned in Chapter 3.

8. For many corporations, model building is still a cottage industry.

9. We will give anyone who can do this a passing grade.

10. There is much more innovation from healthy producers with numerous competitors.

11. *Mark Twain: "A Film Directed by Ken Burns,"* directed by Ken Burns (2000).

12. Think Walt Disney.

13. Shakespeare had it wrong.

14. Again, we measure the time of a footrace beginning from the starting gunshot to when the runner crosses the finish line (attains a viable answer, decision, or result) rather than when the runner stops.

15. Continual improvement includes both continuously improving a current approach (continuous improvement) and looking for new means for solving current problems. We are open to completely changing how we solve the problem. In a word . . . humility.

16. Deming regarded continual improvement (and continuous improvement) as part of the process.

17. Through attaining strategic competence.

18. When playing poker, if "you don't know who the patsy is, you're the patsy."