A Balanced Scorecard for Customer Support

Building the Business Case for Improving Problem Resolution

Introduction: The Search for Business Value

*"**Solving Problems** is the crux of why we're here...people have invested in CTI and CRM over the years, but what has been done to help at the point when a customer is actually talking to a person? ...The goal of customer service is to answer questions, so let's focus on doing it as inexpensively as possible."*
– Hardware Support Executive

High technology support organizations are under unprecedented pressure. Customers are more demanding. Products are more complex. And budgets are tighter than ever.

The good news is that a new generation of technology focused on problem resolution offers the promise of making support organizations increasingly effective.

The bad news is, enterprises are skeptical of spending money on new support initiatives, especially since return on investment for CRM implementations has been dismal: for example, the Gartner Group writes that 55% of CRM projects fail to meet expectations.

Investing in All the Wrong Places
To make the business case for technology investment – and the process improvements that go hand-in-hand with any such initiative – it's important to focus the investment where it can do the most good. In high-technology support environments, DB Kay & Associates research confirms earlier findings by Accenture that most of the expense of support is in actually solving customer problems. As a matter of fact, recent research by the Service and Support Professionals Association indicates that problem resolution drives 82% of the cost of delivering support, with the remaining 18% being split between case management and incident routing.

This may seem obvious, but it doesn't line up with support technology investment. AMR Research reports that computer and electronics support organizations alone paid $209M for case management software licenses in 2001 – and these license fees are frequently dwarfed by implementation and system integration costs. Similar investments are made in telephony switches, call distribution, computer-telephony integration, and other call-handling infrastructure, even though the marginal costs associated with call routing are low.

Estimates of the amount spent on technology for problem resolution are hard to come by, because many vendors are privately held, but available data suggests to us that less than 10% of support organizations' historical technology spending went to problem resolution, even though it's the process that's driving their cost. This explains both the difficulty of showing ROI from historical investments and the emerging focus on problem resolution technology.

Problem Resolution Initiatives Can Drive Cost Down and Increase Customer Satisfaction
As an alternative to the unsuccessful strategies of the past, DB Kay & Associates recommends that support organizations focus their investments on problem resolution. In addition to getting direct hard dollar return, they will make customers happier. We call this the support paradox: "more profitable support operations are generally more satisfying to the customer." In other words, most initiatives that focus on problem resolution to increase support efficiency also improve customer satisfaction.

So problem resolution initiatives are win-win for both company and customer. Unlike restrictive entitlement policies, turning off toll free numbers, and other more obvious kinds of cost savings, investing in making problem resolution better will make your customers genuinely happy you're saving money – because they're getting better products, avoiding issues, helping themselves, and getting the right answers quickly from your support center. Customers want "fast" and "accurate." And what could be more cost effective than doing things quickly, and doing them right the first time?

A Balanced Approach

In order to invest wisely in problem resolution, support organizations need to understand the business value they're going to get from those investments. This paper explains the balanced scorecard approach that DB Kay & Associates uses to measure that value.

Our scorecard shows the key factors that influence financial goals such as revenue, profit, and cost reduction in the support organization. Not surprisingly, the key drivers in delivering these results are the primary processes of problem resolution: faster and more accurate incident handling, more effective customer web sites, and better feedback for improving products. This model provides an explanation for what support executives intuitively know – *problem resolution is the place to focus.*

There are specific kinds of technology that are best suited to making problem resolution more effective: the technology needs to provide a comprehensive, integrated solution for web self-service and agent-assisted resolution; it needs to be context-aware; and it needs to be built on a platform that can exploit both structured support content and unstructured content. We'll discuss these requirements and more, and illustrate them by examining the offerings of one technology vendor, Kanisa.

What's Next?

In the following sections, you'll learn:

·   Why a balanced scorecard is a good way to look at business value of
    support investments
·   How to use the DB Kay & Associates balanced scorecard in your support organization
·   How to raise your organization's scores with technology and process initiatives
·   How to measure and tune your results
·   How software offerings from one vendor, Kanisa, stack up against the technology
    requirements presented in this paper.

DB KAY & ASSOCIATES – A BALANCED SCORECARD FOR CUSTOMER SUPPORT – WHITE PAPER

Making the Business Case: A Balanced Approach

*"**Determination of ROI** begins with an assessment of your business goals and objectives. After you have aligned your business processes with corporate objectives, you can ask: will this investment help me achieve my goals? If the answer is 'no', don't bother trying to determine the ROI as it will be negative."*
–The Gantry Group

ROI Calculators Are Just A Starting Point

Realizing that they needed to help buyers justify purchases to wary CFOs and CIOs, vendors started providing ROI calculators that quantify hard economic benefits from technology investments. For the support center, these are generally Excel spreadsheets that multiply call deflection by cost per call to tally up self-service savings, or that multiply an assumed time savings times the number of calls to calculate the benefits of support center improvements.

These ROI analyses are useful tools. But by assuming factors like "call deflection rates" and "call handle time reduction," they skip over the underlying reasons calls are avoided and support engineers are more effective. So, they don't model the business value in implementing practices that make employees smarter and happier, or products better, or the website more satisfying for customers to use.

Also, the difficulty of assigning ROI to so-called "soft" metrics means that such models often don't capture the value of critical benefits like customer loyalty and satisfaction or improved products.

This style of ROI analysis can sanity check the price tag for technology implementations. But – especially as support organizations transition from a cost center to a profit center – they can't inform strategic technology decisions based on value alone. We need to look beyond ROI analysis for a business case that reflects real value.

The Balanced Scorecard

In their groundbreaking book The Balanced Scorecard: Translating Strategy Into Action, Robert Kaplan and David Norton lay out a new approach for measuring business value that goes beyond a simple financial perspective. This model, which they call the Balanced Scorecard, incorporates financial, customer, business process efficiency, and organizational capability perspectives:

· *Financial:* how is my business delivering against its financial goals?
· *Customer:* how is my business delivering value to customers? How valuable are those customers?
· *Business Process:* how effectively is my business executing the right processes to support our business goals?
· *Organizational Capability:* how are my business and its employees becoming more able to deliver value?

Financial measures are essential. But it's hard to manage your business just by looking at those numbers because they're lagging indicators: they show the results of what you've done. The balanced scorecard adds leading indicators – feedback about what you're doing right now – to help tune your execution. Also, because measures in a balanced scorecard have cause and effect relationships (for example, customer loyalty leads to increased profit per customer), the scorecard provides a way of articulating a business strategy.

Although it's designed for the ongoing management of a business or a business unit, the balanced scorecard approach also provides a way of looking at the business value of an initiative, such as investment in technology and process change. Support organizations with particular goals can study the causes and effects to see where the leverage points are for the most improvement. And the balanced scorecard provides a before-and-after perspective for assessing return.

To plan and evaluate investments in problem resolution, we created a balanced scorecard for high-technology support organizations, presented below.

The Model: A Balanced Scorecard for Customer Support

Balanced Scorecard: *A tool that translates an organization's mission and strategy into a comprehensive set of performance measures that provides the framework for a strategic measurement and management system.*
– Balanced Scorecard Collaborative

Customer support organizations are asked to perform a difficult balancing act. The DB Kay & Associates Balanced Scorecard for Customer Support recognizes the strains placed on the organization by including apparently contradictory outcomes – such as reduced cost and increased customer loyalty – in the same model. (In fact, as we've seen, with improved problem resolution these outcomes need not be at all contradictory.) It also highlights the business processes that provide the key leverage points for improving performance against the scorecard.
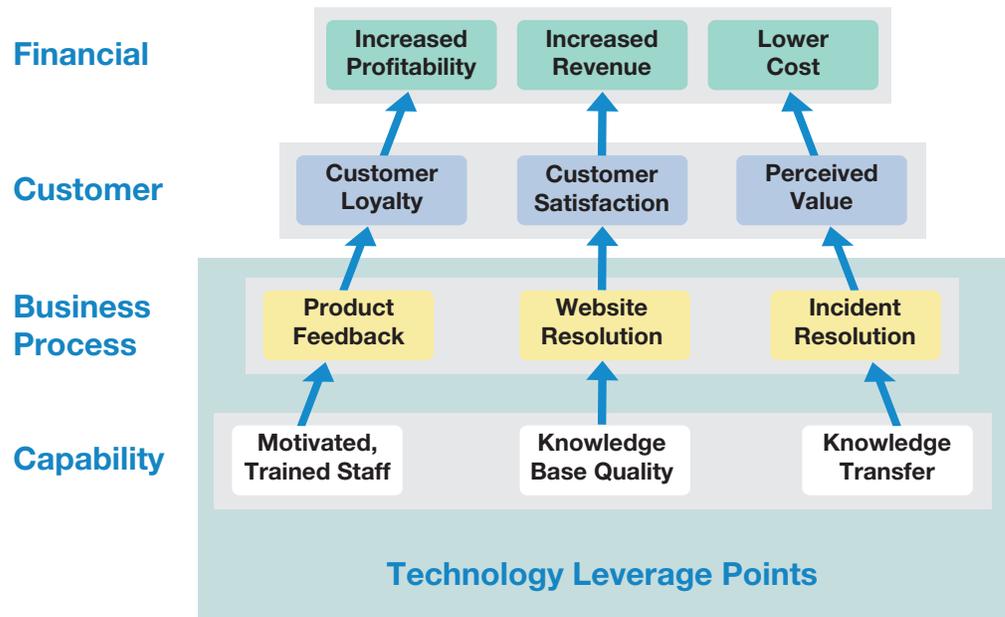

Financial

| Increased Profitability | Increased Revenue | Lower Cost |

Customer

| Customer Loyalty | Customer Satisfaction | Perceived Value |

Business Process

| Product Feedback | Website Resolution | Incident Resolution |

Capability

| Motivated, Trained Staff | Knowledge Base Quality | Knowledge Transfer |

Technology Leverage Points

Figure 1: **The DB Kay & Associates Balanced Scorecard for Customer Support**

The Objectives and Metrics

The scorecard provides support organization objectives in each area: financial, customer, process, and capability. Because objectives are only meaningful if performance against them can be measured, we've included metrics for each.

Financial Objectives

· *Increased profitability*. At the highest level, customer support organizations exist to make the business concern more profitable by ensuring customer repeat purchases, boosting the reputation of the company and its products in the marketplace, and helping customers receive value from their purchases, driving up their lifetime revenue and profitability. Additionally, because support centers are increasingly being managed as profit centers, support offerings themselves must be as profitable as possible.

· *Increased revenue.* The support organization exists to drive top-line revenue for the business which should be reflected in more bottom-line profit. Similarly, increased revenue for support offerings is a measure of their value to the market, and (assuming the offerings are delivered profitably) drives economies of scale and total profit for the support center.

· *Lower cost.* Whether a profit or cost center, support organizations today are expected to deliver each "unit of support" at a lower cost than before. Lower cost is the exclusive focus of traditional ROI analyses, and it remains a mandatory test for most investments.

Financial Metrics	
Increased Profitability	· Profit margin (corporate and support organization) · Total profit (corporate and support organization)
Increased Revenue	· Corporate revenue · Support revenue
Lower Cost	· Service cost to revenue ratio (broken out by product) · Cost per incident · Cost per exception (including self-service incidents) · Incidents per unit shipped

Customer Objectives

· *Customer Loyalty.* The most important driver of lifetime customer value is loyalty – or what author Chip Bell calls "customer love." Loyal customers have an emotional connection with the company and are proud to be its customer. While a perfectly satisfied customer might be willing to switch suppliers for the right offer, a loyal customer won't. As Fred Reichheld has demonstrated in his books about customer loyalty, the economic return on small changes in loyalty is huge. One of the most important drivers of loyalty is customer interactions, especially when something has gone wrong. That's why the customer support organization is in such a good position to drive customer loyalty, and why it must be measured on the loyalty it creates.

· *Satisfaction with Support Experiences.* When we ask customer support executives what their highest priority is, the answer we hear most often is "customer satisfaction." Fundamentally, it is their team's job to satisfy customers by fixing their problems quickly, giving them the information they need to use products effectively, helping them avoid problems, and even empowering them to be better informed buyers. However, satisfaction is no substitute for loyalty. So leading customer organizations are focusing not on average satisfaction scores but on customer dissatisfaction and delight: the customers who are so unhappy that they're going to create problems in the market, or the customers whose extremely high satisfaction leads to loyalty. Transforming the objective from raising

"C-Sat" as a single score and focusing instead on eliminating dissatisfaction and maximizing delight casts the customer satisfaction objective in a way that will return the most business value.

· **Perceived Value of the Solution.** As Geoff Moore made clear in his landmark book Crossing the Chasm, the product that people purchase extends beyond the specific device or software that's shipped from the vendor: people really buy a whole product that includes all the complementary hardware and software, system integration, training, and perhaps most importantly, support needed to get value out of the product. So, as part of the whole product, customer support organizations need to add to the product's value as perceived by customers. In the simplest sense, this is done by fixing problems quickly and accurately, making them "go away." However, support can deliver value far beyond this reactive function by providing feedback to the development organization to make products better for customers, providing information to help customers use products more effectively, and proactively telling customers how to avoid problems. The more the product is perceived as a whole product (or "solution") rather than a device, especially a solution in which availability is a key value proposition, the more opportunity the support organization has to increase the value of the solution to the customer. And, higher perceived value translates to higher loyalty, revenue, and profit.

Customer Metrics	
Customer Loyalty	· Referenceability
	· Repurchase rates
	· Share of product portfolio (what percentage of this kind of product they buy from you)
	· Service contract renewal rates
Satisfaction with Support Experiences	· Mean satisfaction survey scores
	· Percent satisfied (above a "satisfied" threshold score)
	· Percent dissatisfied (below an "unsatisfied" threshold score)
	· Percent delighted (above a very high satisfaction threshold score)
	· Unsuccessful self-service rate (unsuccessful site visits based on click-stream analysis)
	· Call abandonment rate
	· SLA failure rate (how often service goals for hold time, time to relief, etc., aren't met)
Perceived Value of the Solution	· Repurchase rate
	· Referenceability
	· Gross margin for product/solution sales

Business Process Objectives

· **More Effective Incident Resolution.** Handling incidents is the core business process of the support organization, and support executives have devoted significant attention to optimizing the routing, management, and resolution of issues through hiring practices, training, process improvements, and technology investments. However, the key opportunity for improving incident handling is by supporting problem resolution itself.

· **Better Website Issue Resolution.** This objective focuses on delivering support other than through an engineer – website service delivered automatically through self-service portals or by other customers in an expert forum.

Customers are turning to support websites as a way of helping themselves solve problems or learn how to do something. In some of these cases, the customer's ability to serve himself may prevent him from opening a support call. In most cases, the support website delivers help to customers who never would have opened an incident, increasing the value of the solution to them and making them more satisfied.

- *Root Cause Product Improvements.* The support organization is in a better position than anyone else in the enterprise to understand what aspects of the product are hardest for users to use, are most prone to error, upset customers the most, or cause problems that are the hardest to diagnose. Most support organizations have teams and processes focused on doing root cause analysis of support issues in order to provide structured feedback that product management and development teams can use to improve the product, as well as a process for identifying, creating, and notifying customers of patches when needed to address critical issues. Enabling improvements in reliability, satisfaction, usability, and serviceability have a more significant long-term impact than almost anything else the support team can do. The best-handled incident is the one that never happens.

Business Process Metrics	
More Effective Incident Resolution	· First call close rate
	· Incidents per analyst-month (complex environments) <u>or</u> call handle time (high-volume environments)
	· Percentage of incidents submitted via web (instead of phone or email)
	· Participation rate (how often knowledge is attached to a case)
More Effective Website Issue Resolution	· Website success surveys (both active–pop-up or email–and passive, covering customers using self-service, proactive content delivery, and expert forums)
	· Website success (inferred from click-stream)
Root Cause Product Improvements	· Defects submitted
	· Product improvements suggested
	· Lower incident rates

Organizational Capability Objectives
- *Better Knowledge Base.* The knowledge managed and structured by support organizations is their key intellectual property asset. There are many measures of the quality of the knowledge base, but the core objective is to capture as much of the tacit knowledge held in the heads of support staff, product specialists, and customers as possible to prevent problems for customers and expensive re-work for staff.

- *More Effective Knowledge Transfer.* When we asked one support executive what his goal was, he answered, "no rep should be on an island." He then articulated a powerful vision of a support center in which each employee was as effective as the best and was supported by all the knowledge, explicit and tacit, within the organization. We agree with him that this knowledge (which may or may not be in a knowledge base) is the basis of an organization's ability to deliver support, and that the more that it is transferred to each support engineer, whether proactively or just-in-time, the more effective the organization will be in meeting its other objectives.

- *Motivated and Trained Staff.* The customer support organization's ability to deliver is completely dependent on having staff with the right attitude and expertise. The current

economic climate has lowered voluntary employee turnover, which has somewhat reduced management interest in training as traditionally defined. Yet, as product lines evolve and grow more complex, new products are produced or acquired and old ones are end-of-lifed, training and knowledge transfer continues to be important. And, employees still need motivation to perform at their best.

Organizational Capability Metrics	
More Effective Knowledge Transfer	· Time to proficiency · Collaborations captured for reuse · Participation rate · Knowledge reuse rate
Better Knowledge Base	· Time to solution (average days from issue awareness to published solution) · Currency (the percentage of solutions added, deleted, or updated monthly) · Transparency (the percentage of solutions that are available to the public)
Motivated and Trained Staff	· Training units taken per employee · Employee survey results · Turnover rate

A Technology Action Plan

*"**Customers keep asking us to do more for less**, especially because of the current economic environment. I think this is a good thing because it forces us to rely less on headcount and more on technology."*
– Enterprise Software Company Service Executive

Of the balanced scorecard elements we've just gone through, the business processes and organizational capability objectives are the ones that support organizations most directly control. So, a plan for successfully applying technology to improve the balanced scorecard must focus on these objectives, and especially on the business processes of problem resolution.

Obviously, problem resolution in high-tech support is a creative cognitive process and can't be completely automated like a robotic assembly line. That's why the problem resolution process is using technology later than more mechanistic processes such as entitlement, routing, and case management. Still, given that it's not possible to **automate** problem resolution, is it possible to augment human intelligence by applying automation effectively?

DB Kay & Associates believes that the answer is an unqualified "yes," if the technology and process improvements are targeted at the right scorecard objectives. This section provides technology requirements for addressing each scorecard objective.

Improving Business Processes:
Making Incident Resolution More Effective
There are many technologies that can be effectively applied to problem resolution. But typically, these capabilities are either not all on the analyst's desktop, or are provided in siloed point tools, making the analyst figure out if and when to launch yet another tool.

And in most cases, the knowledge environment isn't seamlessly integrated in with the case management environment – the right tab doesn't know what the left tab is doing.

These barriers can be more significant than we imagine, especially when analysts often have 5 to 12 separate tools running on their desktop.

Complete toolbox. What's needed is a problem resolution application that includes search, scripting, collaboration, transactional tools, knowledge capture, and template-driven responses, brought together seamlessly on the analyst's desktop. If an application provides a one-stop shop for support analysts and steps them through the process of using appropriate functionality for each case, it will be broadly used and increase the effectiveness of the support center.

Case management integration. Unlike support tools with simple links from case management screens, an effective problem resolution application must take advantage of all of the context available about the case, including information about the customer and their particular issue. The system must then tailor all its capabilities to optimize its support for resolving specifically that problem, responding to the customer, and capturing any new knowledge created in the process. For example, appropriate answers should be suggested, experts located, response templates proposed, and scripts initiated whenever there is enough information in the case to do so. This results in effective and streamlined support for answering each customer inquiry.

Access to all relevant content. While traditional knowledge bases are limited to structured "solutions," the reality is that support professionals need access to a far broader range of information, including content from support, engineering, professional services, marketing, customers, and partners. These content sources have different owners, are managed in different repositories, and typically can't be accessed through a single portal.

To make incident resolution as effective as possible, all of the relevant information needs to be brought together for the support analyst, regardless of where it resides. The access must

The Problem Resolution Process
*"You can't add resources at the level of the growth of the call volume, so you need to figure out how to get more productive. There are only three ways to do this:
1. improve product quality
2. get customers to help themselves
3. increase the productivity of your own people."*
– Software and Services Company Support Executive

This quote illustrates the importance of focusing on the business process components of the balanced scorecard objectives, which together we call the problem resolution process.

be precise to avoid overwhelming the user. Precise integrated access to all information empowers the support analyst to deliver the right answers faster.

Making Website Issue Resolution More Effective
It takes much more than a search box to make the website an attractive offering for support customers. Websites should empower customers with information by delivering it to them as they need it, making it easy to find more information and enabling customers to help each other.

Proactive Content Delivery. Customers are best served by not having a problem in the first place – which happens if the support site proactively notifies them of content that's relevant to their products, configuration, activities, and interests so they can be guided around known issues. Not only can this "find once / fix many" approach help customers avoid known issues, it can help them get more value from their products by empowering them with information.

Guidance. Unlike support professionals, customers don't spend much time at all thinking about products, reading support content, or diagnosing issues. They may have a fuzzy or flawed view of how products work, and little understanding of how symptoms relate to root causes. And, as a quick look at search engine logs or Internet search "voyeur" pages will show, many are unskilled in searching. As long-time industry observer John Chmaj notes, "they don't know what they're looking for, and they don't know what they don't know." This means that an effective system must step them through the process of saying what it is they're looking for, guiding with suggested terms, concepts, or directions to investigate.

Expert Forums. In particular, for organizations that sell to information technologists, a recent DB Kay & Associates study indicates that expert forums or communities tend to have some of the most timely, detailed, and user-focused support information available. This is especially true for issues that involve cross-vendor compatibility or the application of technology to specific business problems. These expert forums need to be integrated into the support process – users must be able to escalate unresolved issues and search across forum threads and other content sources. Support organizations also need to be able to easily reuse the content in these forums.

Broad content needs. Just like support professionals, customers need precise one-click access to any relevant content, not just support solutions. For example, their "how to" question might be best answered by a marketing white paper, product documentation, or an expert forum posting.

Improving Products More Effectively
Although support organizations focus on helping users with problems, it would be much better if the problems never happened in the first place – if products were more reliable, easier to use, and faster to diagnose and fix when a problem arises. Most support organizations have teams of product specialists whose responsibilities include providing structured product feedback to product management and development organizations. Yet, most support executives are frustrated by the quality of this feedback. Support statistics are too general to be useful for product teams, who need to understand the detailed root causes of service issues.

Not only is data collected in the support center overly general, it's often flat wrong. A leading high-tech support organization we've worked with candidly estimates that only about 30% of incidents are accurately classified by tier one analysts.

Outside of the support center, the situation is often worse. It's hard to gain insights from a click stream or a website query log – there are just too many incidents and no way to analyze what they all mean. And, if that weren't enough, insights from the support center aren't generally integrated with insights from the website in a consistent analytical environment.

Root-cause analytics. A problem resolution application needs to understand, classify, aggregate, and report on all interactions through every channel. By automating the process, human error can be eliminated and website traffic can be exploited. By aggregating content across channels, a unified view of customer issues can emerge.

Also, the analytics need to correlate symptoms, products, environment, user actions, and all relevant factors together for a true root-cause view of the situation. This provides automated assistance to the kind of labor-intensive deep-dive analysis product specialists often have to undertake.

Checklist for Improving Business Processes		
Objective	**Technology Requirements**	**Benefits**
More Effective Incident Resolution	· Comprehensive functionality · Context integration with CRM · Access to all relevant content	· Higher efficiency · More consistent answers · Faster time to relief/resolution
More Effective Website Issue Resolution	· Proactive content delivery · Guidance finding content · Integrated expert forums · Broad content access	· Avoided problems · Avoided customer incidents · Increased loyalty · Higher customer satisfaction
Root Cause Product Improvements	· Automated analysis of problem root causes · Cross-channel analytics	· More usable, reliable, and serviceable products · Less wasted product specialist time · Effective, credible feedback to product development

Improving Organizational Capability:
Making Knowledge Transfer More Effective
Knowledge transfer is happening in your support center. Unfortunately, most of the time, it's happening in an unmanaged way. It's time to replace ad-hoc transient interactions with structured, reusable collaboration.

Expert Location and Collaboration. Collaboration needs to be enabled by an environment that lets people find the right experts, pull them quickly into the conversation, and capture the information they provide. Otherwise, disruptive instant messages, phone calls, and cubicle drop-ins will pester experts with the same questions again and again.

Building a Better Knowledge Base
Many applications that are designed to encourage knowledge capture actually get in the way by requiring a cumbersome authoring, structuring, tagging, or filing process. And, a one-size-fits-all publication process can keep review queues full and publication times long.

As Easy as Email. What's needed instead is a system in which both adding and finding knowledge is as easy as sending and reading email. With email, you don't have to think too much about the details; you just write what you want to say, add a descriptive subject, spell-check if you want, make sure it's going to the right people, and send.

In the old days – say, five or ten years ago – technology wasn't up to the task of auto-tagging or automatically structuring solutions content to deliver email-like simplicity. But today, there are a variety of approaches that enable a findable, structured repository but make the computer do the work, not the support analyst. These are the winning approaches for capturing knowedge.

Flexible workflow. The publication process needs to be optimized. Maybe Legal needs to review documents that are going to customers, but content should be made available to escalation engineers with little or no review, and then shared further based on usage. Publication workflows need to adjust based on the purpose and audience of the document, or review queues will get clogged and time to publish will skyrocket, robbing the content of value.

Better Motivated and Trained Staff
Avoiding frustration. There is no magic bullet that technology can provide to create staff members who are excited to come to work in the morning and who have the skills they need to do their jobs. But siloed, awkward tools that get in the way of solving customer problems are a source of frustration that companies following this action plan will avoid.

Targeting training. Training is expensive and takes valuable resources off the line. Yet, when applied as needed, Yankee Group research suggests that it can have an extremely high return on investment. So the problem resolution application must be able to help support center managers identify areas in which specific analysts or teams could benefit from targeted training.

Checklist for Improving Organizational Capability		
Objective	**Technology Requirements**	**Benefits**
More Effective Knowledge Transfer	· Expert location · Structured collaboration	· Leverage what experts know · Reuse collaboration sessions · On-the-job training
Better Knowledge Base	· Easier capture · Flexible workflow	· More current, comprehensive knowledge · Less staff time invested in creating, structuring, reviewing solutions
Better Motivated and Trained Staff	· An integrated, effective application · Analytics to target training	· Lower technology frustration · More return on training investment

Netting It Out:
The Technology Must-Haves
As you can see, there are many technology capabilities that can improve your performance against customer support balanced scorecard objectives. Stepping back a bit, though, some clear themes emerge.

No matter what specific objectives you're going to optimize, a technology solution that forms the basis of a problem resolution initiative must provide comprehensive, integrated functionality; must adapt to the context of each customer's situation; and must seamlessly integrate both structured support solutions and other enterprise (or partner) content.

A Comprehensive Application
The industry is in the early stages of addressing problem resolution with technology. As in all early stage markets, that means that early adopters have had to cobble together solutions from various point tools because application suites, the hallmark of a maturing market, are not yet available.

We've spoken to many of these early adopters, and without exception they complain about the challenges of integrating separate technology together in their environment. These challenges range from the cost of buying separate applications, the IT resources to integrate them, inconsistent customer experiences, content silos, and – most importantly – the difficulty of getting analysts to use yet another application on their desktop.

So, the first requirement is to make sure that a problem resolution application supports all the functionality customers and analysts need, in an integrated way, including search, scripting, collaboration, auto-diagnosis, CRM integration, cross-channel response management, and so on. Don't fall for the siren song of "best-of-breed" unless your requirements are absolutely unique.

A Context-Aware Application
One of the things that makes problem resolution so hard is that each problem is different, as is each analyst and customer. Each time the phone rings or a web mail goes in the queue, the situation requires a customized response. And that means that the application you use to automate the problem resolution needs to react differently, too.

The system must be plugged in at a deep level with the case management environment so it can know all the relevant facts about the customer, the agent, and especially the incident. Shallow integration, where a simple query string is passed, isn't enough – the context for the interaction can't be captured in just a few short words.

Once the context information is available to the problem resolution system, the system must adjust its behavior accordingly. It must understand that license key issues require access to a special application, and that certain complex issues require more data gathering before they're escalated. Agents should be presented with appropriate scripts, experts, and knowledge, and customers should see the right tools and answers.

If using the problem resolution application means starting the interaction from scratch, the chances are, it won't get used.

A Knowledge Integration Platform
In addition to the application capability described above, the system needs to be built on a platform that can pull together traditional authored support content and other content from around the enterprise.

Most technology support organizations believe in the power of structured support content to help resolve customer issues. Whether authored in the problem resolution workflow, or by a separate group, support content is a special-purpose resource for solving customer problems.

But it's not the only important source. As noted above, answers to customer problems can come from around the enterprise – professional services, marketing, developer relations, tech pubs, and even partners. This is even more true once we move beyond break-fix and into learn-about or how-to interactions that come into the support center or website.

The bottom line is that the applications must be built on a platform that can access, index, integrate, and deliver relevant content, no matter what its source, structured or unstructured.

Key Technology Requirements
· A comprehensive application
· A context-aware application
· A knowledge integration platform

Vendor Evaluation: Kanisa Inc.

*"**Our Kanisa implementation** has resulted in significant reductions in call duration, call volume, agent training time and unnecessary call escalations."*
– Mark Wilhelm, VP Worldwide AppleCare, Apple Computer

Of the companies with software offerings in the problem resolution space, Kanisa is a good candidate to evaluate against these requirements because of its selection by high-technology market leaders like Apple Computer, HP, and Microsoft. Kanisa's products illustrate one technology approach to satisfying many of the requirements for enhancing a support organization's performance against this balanced scorecard.

About the Company
Kanisa was founded in 1997 by Mark Angel to create knowledge management products based on insights he had gained in the process of delivering custom software solutions to leading financial, consulting, and products companies. Kanisa quickly turned its focus on high-technology customer support and applied its technology to some of the most visible support sites in the world, including on Microsoft.com and Apple.com. It invested an uncharacteristically large portion of its resources in science and engineering, even by Silicon Valley standards – over two hundred engineer years – giving it a robust technology portfolio that includes 12 pending patents.

Kanisa Overview
Today, Kanisa offers a suite of products to provide what it calls "knowledge-empowered customer service." These applications include three focused specifically on problem resolution:

- Kanisa Support Center, designed to help support analysts with each step of the resolution process

- Kanisa Support Site, designed to help customers solve and avoid problems using a personalized website

- Kanisa Expert Forums, designed to help customers help each other.

Along with these applications, Kanisa sells "Industry Solutions" for vertical applications including high-technology customer support.

Additionally, Kanisa's product suite includes Kanisa Site Search, recently acquired from Jeeves Solutions, where it had been called JeevesOne. Kanisa Site Search is designed to help customers search and navigate enterprise web sites in an intuitive, managed way.

Evaluating Kanisa: Key Technology Requirements
Kanisa scores well against all three of the key technology requirements set out above. It offers quite comprehensive functionality and includes integrated features that would typically require a number of point tool purchases. Its application is context aware, with both out-of-the-box features and a business rules engine to customize its performance for each incident. And, it's built on a first-class knowledge management platform that is designed specifically to integrate traditional knowledge base content with other enterprise content for delivering customer support.

Comprehensive functionality.
Kanisa's problem resolution suite includes support for the three primary means by which support is delivered: support analysts, a knowledge base, and expert users. It does this in an integrated way, allowing the customer experience to move easily from one model to another – as when a question posted to an expert forum receives answers from the knowledge base or is escalated to the support center. Although there are many self-service, agent assistance, and forums software products on the market, it's unfortunately rare that all three models are supported simultaneously by the same product. This lack is felt especially by the support website owner who must manage three separate systems to support online incident creation and tracking, self-service search, and support forums.

Focusing in on helping support analysts, Kanisa's offering is again more robust than those commonly seen on the market. Not only does it provide the search and authoring capabilities for which traditional knowledge base applications are known, it also includes support for structured collaboration, which is generally left unmanaged in most support organizations, with analysts falling back on ad-hoc instant messaging, telephone, or "sneaker-net" between their cubicles.

It also provides interview scripting, template-based customer responses, and assistance in creating structured case notes to improve analyst efficiency and enhance the quality and utility of CRM case records.

There are always opportunities for more: we hope Kanisa pursues its Microsoft and/or Motive partnerships more aggressively to have WMI or other machine state information presented directly to the analyst. But relative to the current support software market, Kanisa hits a broader spectrum of functionality than any of its competitors: most players in problem resolution either focus just on knowledge authoring and retrieval, as traditional knowledge base vendors do, or solely on collaboration, business rule scripting, or some other point component of problem resolution. This make us score Kanisa high against the "comprehensive functionality" criterion.

Context-aware Application. In order to be able to optimize the resolution process, the system needs to adjust itself to the issue, the customer, and the agent. And it needs to do this quickly and automatically.

Kanisa has two models of context-awareness. The first uses its default behavior to put relevant knowledge, experts, templates, and forms in front of the customer or agent. It does this by automatically classifying information about every event (from a website search box, the case record in a CRM system, the forum topic, or any other available context source) into what Kanisa calls a "knowledge map," which is an index of support topics (such as products, symptoms, and activities) tailored for the particular support center. It then uses this knowledge map to retrieve tools, knowledge, and collaborators based on their conceptual proximity to the incident's context. An iterative dialog mechanism lets the analyst or website user drill in to specify the issue in more detail, further refining the results.

In addition to this fully automatic model, Kanisa provides a business-rules based mechanism. Their "resolution flow" engine fires rules set up by the support organization or imported from a Kanisa industry solution to perform optimized selection of content and resources for specific high-value (or high-risk) support situations, driving the optimal behavior, such as using a particular diagnostic script, gathering specific details in preparation for an escalation, or just getting to a definitive piece of content (such as a compatibility guide) or tool (such as a license key generator.)

The combination of automatic context awareness with support center owners' ability to dial in additional ROI with incremental business rules that customize the system's context awareness for high-value cases provides both power and flexibility with no required customization. This makes Kanisa score high against our context-awareness criterion.

Knowledge management platform. First-generation knowledge bases provided a way to author and store content with structure that made it easier to retrieve for customers on demand. Then, specialized search engines and search-derived applications arrived to exploit unstructured content. Some companies, notably Primus (the traditional leader in the knowledge base market), have bundled a knowledge management platform for structured content with a specialized search engine for unstructured content. But not until now have these capabilities been combined together in a single knowledge platform on which applications are built.

Kanisa is, to our knowledge, unique in having combined these two capabilities into a single platform. Kanisa's applications include structured authoring capability that include the expected formatting, structuring, and publication workflow but are distinguished by their simplicity to use – largely because of the auto-tagging feature that takes the place of the

usual manual statement structuring, decision tree authoring, case creation, or other knowl-edge engineering task that make it impractical for most support professional staff to use a knowledge base application directly. But it also uses its auto-tagging to make unstructured content from around the enterprise just as accessible as structured content and integrated seamlessly with it. This means that support professionals and customers get answers from documentation, community postings, professional services implementation notes, CRM cases, partner knowledge bases, and whatever other content makes sense for them.

It is this unique ability that merits a high score against the knowledge base platform criterion.

Evaluating Kanisa: Business Process Support Requirements
Kanisa provides complete support for improving business processes. Its compliance with the technology requirements is shown in the following table.

As a result of this support, enterprises deploying the Kanisa suite as part of an overall support enhancement strategy have the opportunity to significantly improve their scores relative to business process metrics, which in turn should drive performance against customer and financial objectives.

Kanisa Value: Improving Business Processes		
Benefit	**Technology Requirements**	**Kanisa Evaluation**
More Effective Incident Resolution	· Comprehensive functionality · Context integration with CRM · Access to all relevant content	· Yes. Discussed above. · Yes. Discussed above · Yes. Discussed above
More Effective Website Issue Resolution	· Proactive content delivery · Guidance finding content · Integrated expert forums · Broad content access	· Yes. Personalized portal for support customers · Yes, what Kanisa calls "diagnostic guided search" prompts users to help them express their issues · Yes, with escalation to and from self-service and assisted service · Yes, through the knowledge management platform discussed above.
Root Cause Product Improvements	· Automated analysis of problem root causes · Cross-channel analytics	· Yes, because every issue is indexed to and reported against the support-specific "knowledge map." · Yes, if Kanisa is deployed to each support channel

Evaluating Kanisa: Organizational Capability Requirements

In addition to its support for optimizing the business processes of support, Kanisa provides technology that can be used to increase the capability of your support organization to execute those business processes with higher quality knowledge and better-prepared staff.

Kanisa Value: Improving Organizational Capability		
Benefit	**Technology Requirements**	**Kanisa Evaluation**
More Effective Knowledge Transfer	· Expert location · Structured collaboration	· Yes, based on issue context · Yes. with content reuse
Better Knowledge Base	· Easier capture · Flexible workflow	· Yes, simple solutions authoring inside or outside of the resolution workflow · Yes, with easy tuning
Better Motivated and Trained Staff	· An integrated, effective application · Analytics to target training	· Yes, high usability scores · Yes, "training gap" reports

Applying the Model to Your Business

*"**The business value of IT** comes from the ability to conduct business processes more reliably, faster and at lower cost, and to…improve customer service and provide information that enables better decisions. However, once any new initiative is implemented, the value becomes embedded in the process, and unless pre- and post-implementation metrics are clearly defined, it becomes impossible to measure and report the value of a new application."*
– The Gartner Group

Now that we have objectives and metrics for scoring the support organization and a set of actions to improve the score, the next question is how to use this model to make a business case for technology investments, to evaluate that case in the light of actual results, and to adjust strategy as needed for getting the most benefit from investments.

1. Select Objectives
The first thing to say is that it's not necessary or practical to measure all of the metrics for all of the objectives listed above. Each support organization has specific pains and challenges having to do with its customers, the solution it supports, its relationship with the rest of the organization, and the technology it has deployed. So, given this set of objectives, consider which could ease your pain the most.

As you identify those highest-value objectives in the network, use the cause-effect relationships in the diagram presented earlier to identify what leverage points you have in achieving those objectives.

2. Set Metric(s) Per Objective
For each objective selected in step 1, you'll need to select the metric(s) to evaluate your progress on this objective. The following suggestions will help you select the right metrics.

- While at least one metric is required, consider using two, especially to track an activity or leading indicator with a result or trailing indicator.

- Pick metrics that align with the reason you picked the objective in the first place.

- Make sure it's possible to measure the metric in your current environment.

- Exploit metrics frameworks currently in place. However, also use this exercise as an opportunity to review those frameworks.

3. Determine Baseline Values for Metrics
Once you know what you're going to measure, it's time to take the "before" measurements. This will provide a baseline to measure the value of subsequent improvements.

The earlier you can start taking these measurements the better. Any of these metrics will vary on a day-by-day or week-by-week basis, and may also change with seasons, day of week, part of quarter, product launch, or news events. The more baseline data you have, the better you'll understand the variations to untangle signal from noise post-deployment.

4. Set Targets and Evaluate Business Impact
Now it's time to understand the target future state and the impact it will have on your business.

Create a future state that delivers significant business value and only then worry about how to get there. Chances are, the support organization has already optimized its existing processes; this is a way to get to the next level. So strive for discontinuous and meaningful business change. What would you like your presentation to the company's executive committee to say? What's the headline that gets printed in CRM magazine when they profile your operation? By writing this down, you create a model of the business impact you require.

Then, see what this future state means in terms of the objectives and metrics that you've established. For example, if your goal is to make a significant impact on the company's top line, what would that be? 5%? 1%? 10%? $50M? And to do that, how would your selected loyalty metric change? And so on.

At this point, by writing down interrelated targets, you're making explicit assumptions about the quantitative basis of the causes and effects among your metrics – in effect, creating a hypothesis which you'll test as you roll out your initiatives.

5. Develop an Implementation Strategy
Use the action plan and checklists above to understand the initiatives that will get you to your goals. Make sure you build your implementation strategy on the objectives you want to reach and not the metrics that you'll use to measure your success. Metrics are the means of measurement, not the end.

Learn about your options by spending time with industry groups like the Service and Support Professionals Association (SSPA), the Consortium for Service Innovation (CSI), consultants like DB Kay & Associates, and even innovative technology vendors.

Evaluate any technology investment against the requirements checklists provided above.

If necessary, iterate until you have a compelling business case and a plan to get there.

6. Implement and Measure Impact
You'll learn a tremendous amount as you implement your project. So remember to do it in phases and cycles, evaluating the results of each phase. Be skeptical of vendors and consultants who tell you that only a "big bang" reengineering project will deliver real benefits – stick to what AMR Research calls "guerilla CRM" implementations that can demonstrate clear business impact with minimal risk.

Once you complete your implementation, see how your metrics are responding. If they're doing what you expected, then you're ready to implement the next phase. But if not, diagnose and correct.

Remember, there's no such thing as a technology initiative, because technology affects the processes it serves: there is only the co-evolution of technology and business process improvements. So make sure not to ignore the human and process aspects of each phase. Are your most influential staff bought in, or are they "pocket-vetoing" a tool or technology because it threatens them or simply doesn't work for them? Do your customers know about new capabilities available to them? Are the operational managers on board? Are people being trained and coached and mentored? Without a change management process, technology is guaranteed to disappoint.

7. Evaluate
We recommend a double-loop evaluation of each phase of the process to understand not only if you did things right, but if you were doing the right things.

The evaluation phase should open the strategy, the initiatives, and the implementation to question. If you're seeing some of the results you expected, but not all, maybe the model needs adjustment.

The results of this diagnosis can be a new model and future state with new, more appropriate supporting objectives, a new implementation strategy, an improved execution of an existing strategy, or a combination of all three.

What's Next?

Having read this far, you should have:

· An understanding of why we're so focused on problem resolution
· A new balanced scorecard for understanding business value in the support organization
· A list of actions and requirements for applying technology to the scorecard objectives
· An example evaluation of a vendor's technology against the technology requirements
· A process for selecting and measuring the value of specific technology initiatives.

The next step is up to you. The pressure you're under isn't going to go away, and you've already optimized your current operations. If you're ready to take your support organization to the next level, this process can help.

DB Kay & Associates is ready to help you implement it successfully.

About DB Kay & Associates

DB Kay & Associates is a consultancy that helps high-technology customer support organizations plan, measure, and execute technology initiatives to deliver dramatic business results.

David Kay, principal of DB Kay & Associates, has been an innovator in applying technology to knowledge-intensive business processes like customer support since 1984. He has developed business processes and applied software for knowledge workers in customer support and beyond. Kay is co-inventor of six pending patents covering the use of next-generation technology in customer support.

This paper is the result of collaborations with leading customer support organizations and vendors, and extensive market research performed in early 2003.

DB Kay & Associates has service packages to assist with the implementation of this methodology on a fully outsourced basis or as an advisor to your team. For more information on how to apply this methodology to your support organization, visit us at www.dbkay.com or send us a note at scorecard@dbkay.com. And, make sure to go to www.dbkay.com/library to learn more about the books and resources mentioned in this paper.