

Creating a BPM Blueprint for Mobile Workforce Management

A ViryaNet White Paper



VIRYANET

INTRODUCTION

MARKET PRESSURE

Service organizations face constant pressure. In the competitive environment of the 21st century, managers are almost expected to bend the laws of physics to ‘do more with less’.

Service organizations strive to:

- Complete more work orders every day
- Increase customer satisfaction by faster issue resolution times, while meeting and exceeding Service Level Agreements

Service organizations realize that the best means to respond to today’s pressures and maintain competitiveness is to optimize their operations. In order to do so, many service organizations deploy mobile field service solutions. In a recent survey done by Aberdeen, the following average performance improvements from mobile field service solutions were recorded:

<i>Worker Productivity</i>	+27%
<i>Customer Satisfaction</i>	+19%
<i>Overall Profitability</i>	+17%
<i>Service Revenue</i>	+13%

Source: Aberdeen

Although existing mobile field service solutions represent an important step in elevating operational performance, they do not necessarily make a service organization best-in class.

Most mobile field service solutions focus on optimizing discrete functions, such as scheduling dispatching, or forecasting. *But in order to achieve the ultimate goal of the most cost-effective, productive, and profitable service operation, in an environment of conflicting constraints and constant change, a new breed of mobile field service solutions is emerging, consisting of a blueprint of work flows, uniting the discrete functions, and optimizing enterprise processes to achieve new heights of service excellence.*

SERVICE EXCELLENCE THROUGH PROCESS IMPROVEMENT

Although, mobile field service represents a unique challenge of distributed processes (integrating systems, people, and organizations), the recipe for service excellence is not unique to mobile field service.

Business process management (BPM) is a discipline that requires organizations to shift to process-centric thinking and to reduce their reliance on traditional territorial and functional structures. BPM theory and practice can help you achieve service excellence by embracing and accommodating:

- Best practices – Maximum automation ensures the repetitiveness of best practices, making sure that the users focus on managing the exceptions.
- Ever changing - Consistency with flexibility ensures adaptation to changing needs and constant improvement of existing processes.
- Business visibility - You can’t improve if you do not measure.

ROLES

Each participant in service delivery has a distinct role.

THE PLANNER — Responsible for building strategically forward looking plans, matching levels of future demand (forecast) with potentially available resources, this person thinks in “few months” time-frames, assisted by forecasting what-if algorithms. Dashboards, automation, and visibility tools track and point out to him irregular trending behavior. In some enterprises, the planner is also responsible for building the short-term tactical plans (see the Dispatcher).

THE DISPATCHER — Responsible for building concrete tactical plans, matching specific work orders with the specific engineers who will perform the work, the dispatcher builds an optimized plan, considering the work order requirements (time commitments, required skills, and other criteria) and the business optimization policies (travel times, load balance between engineers, usage of internal versus external resources, and more). This person thinks in short time-frames (days or weeks), assisted by combined sophisticated automatic optimization algorithms and the ability to manually change the plan. The dispatcher also monitors the execution of the plan, and proactively responds to a constantly changing environment. These changes may include new emergency work orders, longer than planned work, and travel times all require processes, visibility, and real-time feedback from the field.

THE MOBILE WORKER — First and foremost, this person is responsible for carrying out the work, but is also the most important resource of real-time information. Timely and accurate reporting of the field activity is the lifeline of a proactive response to change.

THE MANAGER — Managers are those who are accountable for the successful operation of the service organization. Managers intervene and influence effectively with accurate information at the right time, which is enabled with business visibility tools. These tools, discussed later in this document, provide tactical and strategic awareness and answers to the plan and variations to that plan.

PROCESSES

Service organizations striving for operational excellence must scrutinize and optimize their day-to-day processes, and embrace automation, agility, and flexible integration.

In the context of the enterprise back-office, service chain processes are located between the demand chain and the supply chain. These processes present a unique challenge due to the nature of a distributed environment, complex optimization problem, and hard-to-predict exceptions.

Almost two-thirds of best-in-class field service organizations cited poorly defined business processes as a key challenge to mobile field service success, nearly double the proportion of average and lagging organizations that identified this as a challenge. Aberdeen

The demand chain typically is triggered by a customer calling into a call center. There, the customer status and entitlement are checked. The following factors are considered to schedule the mobile worker: priority of the call, technician availability, technician skill, and technician proximity. Other factors that affect the schedule optimization process include: availability of parts, anticipated drive time, traffic conditions, customer availability, and more. Then, systems and constituents associated with the demand and supply chain are informed on the progress of the work and the usage of resources. Finally, the completion of the transaction initiates an interface to the back-office HR, financial and accounting systems.

A PROCESS BLUEPRINT OF MOBILE WORKFORCE MANAGEMENT

A process blueprint provides best practices for mobile workforce management, and allows an organization to flexibly adapt to changing market conditions, modified internal policies, or new corporate initiatives. It includes the following four major elements:

- Work pooling
- Tactical plan
- Strategic plan
- Visibility

WORK POOLING

Work creation is a distributed process in many enterprises. Work orders, which are different in nature, are normally created in different organizations within the enterprise. (For example, in most utilities, problem-resolution work and long-term construction work are created by different organizations.) The concept of pooling all work enables the enterprise to maintain a distributed and flexible environment of work, while consolidating and optimizing the functions of scheduling and dispatch.

There are many types of work orders, from simple one-time/one person tasks to complex multi-day, multi-dependent actions, requiring multiple human as well as non-human resources.

Work pooling processes accommodate a rich interface to the demand chain, and support the following functions

- Commit a work order
- Update a work order (handling the complexities of tracking it through the service chain)
- Reject a work order (avoid virtual load by applying common cause logic and load policies)
- Negotiate a commitment when booking an appointment

TACTICAL PLAN

Definition: a set of short-term (days-to-weeks timeframe) processes, analyzing the demand, optimizing the tactical plan, and continuously responding to change.

The tactical plan includes the following functions.

Backlog Management — This function includes a collection of policies (based on commitments, priorities, work types, and resources) that check the ‘ripeness’ of work sitting in the work pool. As a result, work orders are treated at the right time (emergency work orders are sent for immediate assignment and dispatch, prioritized work order are taken into account when creating the next day’s plan, and low priority work orders are treated based on the current demand and available resources).

Assign Management — This function matches work and resources, based on constraints (knowledge, capacity, proximity, dependency) while optimizing business goals (task criticality, resource suitability, route, and cost). This function includes both automatic and manual processes. Manual assignment of work orders (assigning an emergency) is normally accompanied by a relevant escalation process following common human-to-human workflow paradigms.

Dispatch — This function reveals the tactical plan to the field based on business policies and best-practice, guiding the negotiation of urgency, day plan stability, coverage areas, and flexibility.

Attendance Management — This function includes tactical resource management (updating availability and shifts placement based on the changes to the tactical plan).

Monitor the Execution of the Plan — This function closely monitors the progress of the tactical plan (travel times, work times, arrival and leave, changes in availability). When variations occur or unexpected situations arise, alerts notify the dispatcher and the system initiates necessary corrective actions (minimizing the need to manually handle exceptions).

STRATEGIC PLAN

Definition: a set of long-term (months timeframe) processes, forecasting the demand, optimizing the required resources and constantly monitoring to find irregular trending behavior.

The strategic plan includes the following functions.

Forecast — This function forecasts demand, feeding the strategic planning process.

Resource Planning — This function includes a set of what/if? tests, performed both automatically as well as manually, matching required resources to the forecasted demand.

Resource Management — This function executes the strategic plan, enforcing a change in the available resources as a result of the demand analysis.

BUSINESS VISIBILITY

Managers must be proactive, constantly seeking ways to improve operational effectiveness. Business visibility tools aggregate information in real time, and present it in the context of the overall plan. This summarized view provides managers the status of both the tactical and strategic plans, presenting the right information at the right time to ensure proper response within the window of opportunity.

THE TECHNOLOGY: BPM AND BAM

The concept of processes and workflows has been discussed for decades, but only recently its emergence in the form of Business Process Management (BPM) is heralded as one of the most influential technologies in the enterprise software space.

The evolution of integration technologies as well as the merge of different process needs (application-to-application, human-to-human) into new standards is the drive behind the emergence of new breed of infrastructure – the business process platforms suites.

The adoption of BPM will begin as tactical initiatives for automating workflow, growing over time into an enterprise wide cross-functional transformation. The BPMS will increasingly be recognized as essential for the management of business processes and will be integrated into application packages, transforming the application market. Gartner

The term Business Process Management (BPM) refers to designing, executing, and optimizing cross-functional business activities that incorporate people, processes, and systems.

BPM KEY VALUES

Automation and best-practice delivery lead to better ROI and shorter time-to-market.

BPM products automate repetitive steps, integrate applications as well as humans, and support complex decision-making. As a result, they provide a platform upon which firms can lower their fundamental operating costs while enhancing the value they deliver to customers. Maximum automation assures that human resources are focused on managing the exceptions.

Building process agility, embracing a change further optimizes the process (business policies translate to business rules that direct decisions within the flow).

More and more, organizations are discovering that their ability to quickly react to change is significantly inhibited by their existing systems, processes, and organizational structures. Effective BPM infrastructure will allow the organizations to apply new policies and constantly optimize processes that are already in place. By wrapping the core functionality of existing systems (and existing processes), and exposing decision points in the form of business rules, a change to an existing process and even the creation of new processes is easily accomplished without affecting the legacy application.

It is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change”, Charles Darwin

BAM

Business Activity Monitoring technologies have evolved with BPM suites. BAM monitors the business state in a non-disruptive way, supporting both structured and unstructured processes without making a change in the way the processes are orchestrated. BAM tools utilize messaging, data integration, advanced data caching, analytics monitoring, alerting, and reporting technology to deliver requested critical information within seconds of an event or change in status.

BAM KEY VALUES

Right-Time Business Intelligence

Defines the concept of providing real-time access to critical business performance indicators to improve the speed and effectiveness of business operations, ensuring that managers can respond within the 'window of opportunity'.

Analyze Processes, Trends, and Contexts

Monitors single processes and events, creating aggregations and correlations between discrete events in order to identify trends trying to find irregular behaviors and putting that in the context of previous or expected behavior.

Personalization

Provides personalized information that supports individual needs for information as well as role-based data level security.

SUMMARY

ViryaNet BPM builds on the leading Business Process Management suites available today, and captures ViryaNet's years of experience in the field service industry. ViryaNet BPM is functionally rich, and fulfills the promise for maximum automation, agility and visibility — ensuring service excellence.

ViryaNet BPM is a set of pre-defined processes, business rules, alerts and interfaces well integrated with the ViryaNet mobile workforce management solution set

For more information, contact ViryaNet today.