



Performance Management Framework for Mobile Workforce Management and Field Service

Using Metrics and Analysis for Continuous Improvement

Introduction

This white paper discusses performance management – how you can measure, analyze and make decisions about the performance of your workforce and service organization.

Mobile workforce management is a complex process that includes workforce planning (e.g., size, skills, geography, etc.), assignment decisions (that are made at different times and vary in quality), and plan execution (that is subject to exceptions and variances between individual field workers).

In order to align this complex process with your business goals, you need to measure your performance and develop various corrective actions (e.g., how to handle low-quality assignment decisions, field workers who are not performing as well as others, or problems in the workforce buildup or with an internal business process).

Measuring and monitoring the right factors is crucial to fine-tuning the performance of your organization and addressing your business objectives. Ongoing monitoring and analysis of your most significant key performance indicators (KPIs) can guide meaningful business decisions that lead to continuous improvement.

Performance must be viewed in relation to your business goals. In addition, business questions associated with mobile workforce management must be translated to KPIs and Balanced Scorecards. But which KPIs and scorecards are most suitable for your business?

Monitoring and analyzing metrics with the use of ViryaNet's mobile workforce management solution allows you to generate Balanced Scorecards and executive dashboards that can help your organization make business decisions and take action.

As a service organization, you need to define your goals, build your business processes, and measure your performance against business objectives. By combining a performance management framework with ViryaNet's mobile workforce management solution, you can become a champion in your field.



Why Have a Performance Management Framework?

“Although financial metrics will remain a fundamental measure of value, it is recognized that they only represent lagging indicators of performance. Business managers need a better understanding of the drivers of their business, the nonfinancial metrics that are the leading indicators of financial outcomes.”

Source: *The Gartner Business Value Model: A Framework for Measuring Business Performance*, March 2010

Most service organizations tend to think that one of their main objectives is to minimize travel time. However, the related business goals often are: reduce cost, increase customer satisfaction, improve productivity, or a combination of these goals which are usually conflicting.

Often, the main conflict is balancing financial and non-financial business goals. For example:

- Goal 1: You want to save \$K.
- Goal 2: You want to increase customer satisfaction, which is currently at level X.
- Combined Goal: You want to increase customer satisfaction to level Y (where Y is greater than X), while keeping the goal of saving \$K.

As it turns out, sometimes these goals can be achieved by driving less. But also, for example, by allowing more driving time per task, scheduling more work per day, or achieving a better workload balance.

A Performance Management framework allows you to analyze your current performance, compare your metrics to your historical data, and review other options, leading to decisions tailored to best fulfill your company's business needs.

You may have business goals that you want to attain, for example:

- save 10% in the next year on tasks requiring fewer skills
- improve on-time for appointments by 5% in the next quarter
- achieve SLAs met in 98% of cases

You also may have business questions about your service organization that you want to answer:

- Does our organization have the right mix of resource skills?
- Why does group A have a higher productivity rate than Group B in the last 2 quarters?
- Will our business improve if we consolidate departments?
- Should our field technicians see the entire schedule for the day or only the next job?

These business questions need to be related to the actions to be taken, for example, a policy change (e.g., overtime), process change (e.g., communicating with the customer), or change in behavior (e.g., mentoring worst performers).



With a Performance Management framework, you can look at data to make decisions and continuously improve your organization through a process of:

- Defining your business goals.
- Defining your business questions.
- Continuously measuring key performance indicators (KPIs) to analyze your business questions.
- Understanding which metrics should be combined to form a Balanced Scorecard that can motivate executive decisions.
- Making executive decisions, based on measurements and Executive Dashboards (which could be based on Balanced Scorecards), to attain your predefined business goals.
- Taking action, based on these executive decisions.
- Measuring again to ensure your actions are leading your organization in the right direction.

Aberdeen Group's Competitive Framework notes that best-in-class service firms exhibit several capabilities, including "performance management (the ability of the organization to track and measure performance, and to make service delivery process changes with the aid of enhanced performance information)."

Within a Performance Management framework, you can:

- Determine what are X and Y and how to measure them, using predefined metrics for customer satisfaction, operational, and financial goals.
- Drive strategy maps and create connections between different metrics, including:
 - how to link KPIs, analysis, scorecards, and presentation of results.
 - which metrics to present on the same scorecard to make it balanced and to use the Balanced Scorecard as an executive dashboard to drive decisions.
- Map the connections between the KPIs and identify their hierarchies and relationships.
- Decide which KPIs are the best to present a balanced view.



Measuring and Monitoring the Right Factors

Key Performance Indicators (KPIs)

Depending on your business goals, you may have hundreds of KPIs. In fact, you may start with less than 10 KPIs, but the dimensions of time (e.g., day, shift) and resource level (e.g., technician, crew, zone) increase the total number of KPIs exponentially.

When identifying your KPIs, keep in mind the following:

1. What does “better” mean to you?
 - Make sure you know where you’re headed. To ensure your company is improving, you must first define what “better” is, according to your business goals.
2. Each KPI must be attached to a business goal.
 - For any improvement process, you must start at the macro level, so you can see the big picture, before drilling down to the details.
3. One KPI can’t tell the whole story.
 - A set of metrics is necessary to form a balanced view that managers can act upon, which is why the Balanced Scorecard approach is recommended.

Balanced Scorecards

A Balanced Scorecard is a strategic planning and management system designed to align business activities to the vision and strategy of the organization, improve internal and external communications, and monitor the organization’s performance against strategic goals. It provides a framework for performance measurements and helps planners identify what should be measured or modified.

As a combination of a few metrics (KPIs) that presents a balanced picture of a certain business question, a Balanced Scorecard aggregates financial, efficiency, and other aspects. A collection of a few reports on a Balanced Scorecard forms an executive dashboard – the various business aspects presented together create a tool for executive decision making.

The Performance Management Table

How can you achieve a balanced picture? When defining your business goals and business questions, you must consider 4 categories of performance: productivity, financial, customer satisfaction, and internal business processes (sometimes productivity and internal business process are combined into one category – “operational”). These 4 categories offer a balanced view of your organization’s performance. The table below provides an example of balancing business goals.

Type	Business Question	KPIs	Dimensions	Analysis	Business Goal
Productivity	Motivation for measurement and analysis	Measure Measure Measure	Time Resource Region	Using ViryaNet G4 Optimizer and data from ViryaNet G4’s database	Improve category X by Y%, over time Z
Financial	Motivation for measurement and analysis	Measure Measure Measure	Time Resource Region	Using ViryaNet G4, and other relevant sources	Save \$K by action A over time T
Customer Satisfaction	Motivation for measurement and analysis	Measure Measure Measure	Time Resource Region	Using ViryaNet G4, and other relevant sources, such as questionnaires	For example, lower number of return visits by C% over time D
Internal Processes	Questions related to employee training, development, and business growth	Measure Measure Measure	Time Resource Region	Using ViryaNet G4, and other relevant resources	For example, improve productivity through a different training process

Performance Management and ViryaNet G4

In the *State of Service Management: Forecast for 2012*, the Aberdeen Group identifies the roadblocks to service growth: economic concerns, cost-cutting initiatives, insufficient technology, and competitive factors. In order to “ensure the sustainability of their customer-focused and profit-centric service enterprise” best-in-class service organizations must “follow a strict performance management regimen that focuses on operational, financial, and customer-facing metrics”.

To produce good results you must know your business goals and review your company policies. You need a Performance Management framework and you must define the most appropriate set of KPIs and related goals for your organization. ViryaNet can help ensure you achieve the best possible business value from our mobile workforce management solution, while continuously improving.

By monitoring your metrics and analyzing the performance of your service organization via ViryaNet G4 – ViryaNet’s mobile workforce management solution – and in particular, the Optimizer, you can achieve your specific business goals. For example, some ViryaNet customers have decided to change their outsourced and in-house resource mix, based on the type of work order. After measuring and analyzing your KPIs, you may, for example, tune your software configuration to better serve your ever-changing business objectives. Alternatively, after your analysis, you may conclude that your organization needs to revise a specific process or policy in order to better serve your overall business goals.

Business Intelligence (BI) is the umbrella term for a variety of practices and tools used to analyze your organization’s data. Performance Management is the process that drives operational excellence.

Your BI practice should include the enabling technology to monitor, measure and analyze data that can be used in a Performance Management framework. The Performance Management framework drives the BI process, and includes definition of goals and recommendations on corrective actions. The combination of the process and the technology drive continuous improvement.

ViryaNet G4 includes BI tools to access, visualize, gather and analyze your KPIs, such as:

- Real-time KPIs, generating alerts and visual indicators that drive proactive and better informed operational decisions.
- Out-of-the-box dashboards and reports for operational and executive managers for visualizing and analyzing your field service metrics.
- Predictive analytics to forecast future load and simulate what/if scenarios.

ViryaNet Performance Management framework and services combined with ViryaNet G4 BI tools ensure ROI and leverage business value.



Increase Business Value with a Performance Management Framework and ViryaNet G4

Below are some examples of business questions and business goals, as well as the related KPIs that can be measured and analyzed, using ViryaNet G4:

1. If your goal is to increase customer satisfaction by reducing the time from the opening of a job (call/task/case) to resolving the job (i.e., “resolution time”) by Y%, while not compromising resource productivity or operational costs, you can use the data from ViryaNet G4 to measure and analyze the factors to be presented in a dashboard or a Balanced Scorecard.

For example, you can measure, analyze and present combined KPIs, including:

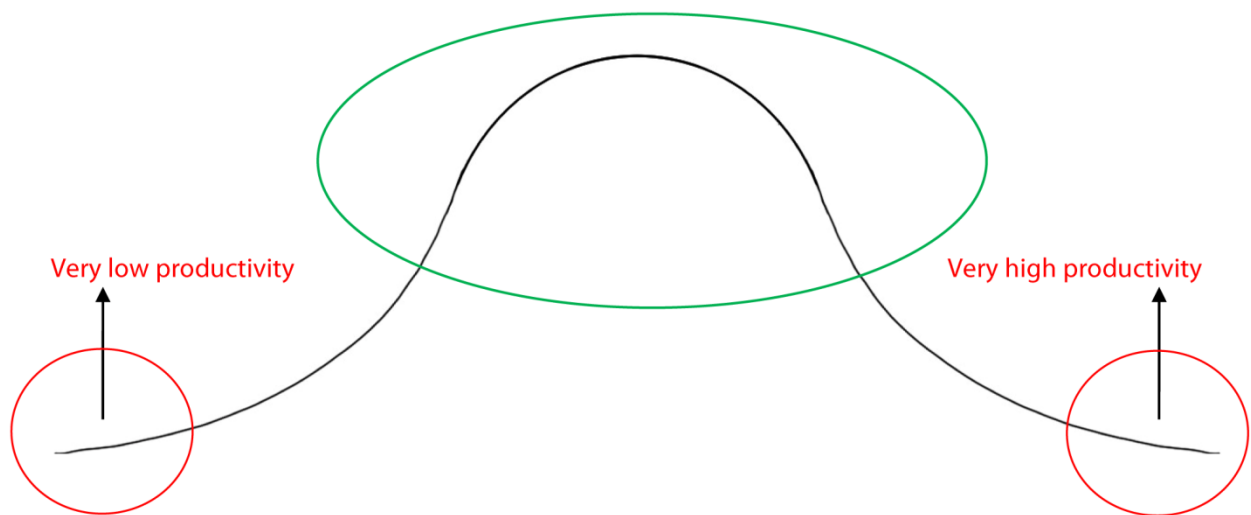
- resolution times per zone/center
- resolution times related to skills required to resolve the job
- resolution times, based on time of year
- number of jobs performed daily by employee per zone/center, on average, and by month

As part of your analysis, for example, you would review the reasons for longer than expected resolution times and return visits.

2. To address resource productivity through better route optimization, you would measure and analyze driving time with respect to the “minimize driving time” objective in combination with other defined objectives which you don’t want to compromise. These metrics can be presented on the same Balanced Scorecard as productivity, efficiency, and workload balance measurements, relating numbers of jobs completed per day to sets of skills.

In addition, different mixtures of types of jobs (e.g., urgent and non-urgent) could be a good measurement to consider in this analysis. You can measure, analyze, and monitor these objectives, using the ViryaNet G4 Optimizer and its summary tables.

When analyzing productivity, you want to “lose the tails”. You don’t want very low productivity due to idle time of your resources, but you don’t want very high productivity which is a result of costly overtime hours.



If your goal is to save \$X over the next year, one approach is to analyze the usage of over-skilled resources for jobs requiring fewer skills, and compare these costs to outsourcing costs, or changing employee training policies.

While some of the financial metrics may need to be pulled from a different source, all the information regarding productivity, efficiency, travel, routing, work, skills, number of jobs requiring different skill mixtures, number of jobs completed on average per day by a skilled resource vs. a less skilled one, and all other factors related to your service and mobile workforce management, can be analyzed with the help of ViryaNet G4's Operational Database and Optimizer.

Let's say you are a telecommunications provider trying to solve the problem of late arrivals at appointments without compromising the assignment of enough work to your field technicians.

As part of helping you review your performance, ViryaNet interviews you about your business needs and analyzes your operational database. We may recommend a new Optimizer configuration that minimizes driving time, while scheduling as much work as possible. We may suggest start times be booked within at least a 1-hour window, so that the Optimizer can re-assign work in a more optimal manner in combination with the remaining, possibly non-appointment work. In addition, we may recommend that you run the batch optimization center-by-center by zones on weekdays, but with no zone restriction on weekends.

The result of ViryaNet working with you to address your business needs and analyzing your data: better scheduling and optimization of your workforce as well as a focus on continuous improvement to help you attain and maintain best-in-class status.

ViryaNet customers are already using metrics and analysis in combination with ViryaNet G4 and its BI modules, to improve their business, mobile workforce management, and field service operations. For example, with a Performance Management framework, ViryaNet's Star Schema Data Mart, the Executive Dashboard (Business Intelligence) tool, and analysis based on ViryaNet G4 components, a customer increased the number of in-house technicians and reduced outsourcing, saving money, achieving productivity and efficiency goals, and reducing the average downtime for revenue-generating equipment from days to hours. Using a Performance Management framework and analyzing results from the ViryaNet G4 Optimizer and Operational Database, another customer changed zone restrictions, outsourced resources for jobs requiring fewer skills, and achieved productivity goals, saving \$3 million in labor costs over 2 years.



ViryaNet's Performance Management Framework Integrated with ViryaNet G4

You can become a champion in your field with a combination of ViryaNet G4 and our Performance Management Framework. ViryaNet can help you:

1. Identify business goals related to field service and mobile workforce management specific to your organization and the significant KPIs associated with each goal.
2. Classify business questions – what will be measured, how to analyze your metrics, which goal each KPI is directed to serve, and categorize each metric.
3. Set baselines and targets for each of the defined KPIs.
4. Determine how and when to measure each of the KPIs, including:
 - which KPIs are directly connected to the mobile workforce management solution or other parts of your organization.
 - which analysis can be beneficial for attaining your goals.
 - which measurements and analysis can be conducted using ViryaNet G4's Scheduling and Optimization configuration and summary, Operational Database, Data Mart, or other sources.
5. Create a strategy map including the hierarchies and relationships of the different KPIs that have been defined.
6. Describe how your Balanced Scorecard should look. (Which KPIs will be presented together? Which factors will be presented in each scorecard to make it balanced?)
7. Tailor a Performance Management framework, plus a scheduling and optimization tuning program, based on your specific needs, to ensure maximum business value and ROI.
8. Determine the form of reports, dashboards, and the analysis to be used.
9. Perform an initial KPI analysis – using your data – and review this analysis with you.
10. Establish a schedule to conduct a KPI analysis on a periodic basis (e.g., quarterly).
11. Build and maintain a Performance Management practice within your organization, integrated with the use of ViryaNet G4.



Summary and Conclusions

Performance Management is critical for continuous improvement. Implementing a Performance Management framework integrated with ViryaNet G4 can help you become a champion in your field. Using Performance Management methodologies, ViryaNet can help tune your planning, scheduling and optimization processes to suit your existing and evolving business goals, so you can realize a better ROI faster on your mobile workforce management solution.

Things to remember about Performance Management:

1. You can only improve what you can measure.
2. To improve, you must define what “better” is for each of your KPIs.
3. Each KPI must be attached to a business goal.
4. One KPI can't tell the whole story. Only a combination of different metrics (KPIs) can give you a balanced picture (Balanced Scorecard).
5. The analysis and presentation of results should help your organization make informed business decisions and take action.
6. The combination of Performance Management and ViryaNet G4 gives you the data you need to satisfy your business goals, gain business value, and realize a better ROI faster.
7. To maintain a successful Performance Management process, employees at all levels must be involved as active participants. An accessible Performance Management tool can contribute to your success by engaging your employees and ensuring ongoing improvement.
8. Best-in-class organizations use Performance Management to continuously improve and remain champions in their field.

Related Resources

Field Service 2012: Mobile Tools for the Right Technician, Aberdeen Group, July 2012

Gartner's Business Analytics Framework, Gartner, September 2011

Maturity Model Overview for Business Intelligence and Performance Management, Gartner, December 2008

Service Intelligence and Performance Management, Aberdeen Group, March 2011

State of Service Management: Forecast for 2012, Aberdeen Group, January 2012

The Gartner Business Value Model: A Framework for Measuring Business Performance, March 2010

The MAXIMO Manager's Guide to Business Performance Management. Osana, Monica; Sage, Philip; de Asis, John Mark; Tepora, Dante; Taggs, Richard. Reliabilityweb.com Press, 2011.



APPENDIX A

ViryaNet G4

ViryaNet G4 ensures optimal daily schedules to best reflect service business priorities.

ViryaNet G4 is the industry's only auto-calibrating optimization technology and embedded service priorities engine that enables the continuous optimization of scheduling resources within dynamic service environments.

To achieve objective-based modeling in ViryaNet G4, we:

- Provide customers with a clear, out-of-the-box set of supported objectives, built from the most common mobile workforce management business objectives.
- Use these out-of-the-box objectives within ViryaNet G4 to intuitively define the balance between objectives by prioritizing the objectives and defining threshold levels for compromising a higher-priority objective in favor of a lower-priority one.
- Auto-tune the internal parameters of the Optimizer, with every run, to best accommodate the prioritized service objectives and the data for that run. So you do not have to worry about having an Optimizer "bad hair" day.
- Offer an easy way to objectively measure the quality of a plan, and
- Provide greater visibility by measuring and presenting the objective's results for each plan.

Reports & Dashboards

Normal business processes produce information at every step in the process. But how do you really know what's happening in your operation day-by-day, hour-by-hour, minute-by-minute? How can you get to the right data?

With ViryaNet G4, executives can review:

- How much of the working day is consumed with non-productive work or travel?
- What's the variance between best and worst performers?
- Are there enough or too few resources available in a service team/area to fulfill upcoming jobs?
- What percentage of jobs completed successfully on the first call?
- How do these metrics compare with an earlier period of time?

With ViryaNet G4, operations managers can determine:

- How am I doing right now against my plan?
- Will I be able to keep all my commitments?
- Will I incur any overtime today?
- How effectively are my schedulers and dispatchers managing new or urgent work?
- Am I underutilizing my workforce?



ViryaNet BPM Blueprint for Mobile Workforce Management

The benefits of the Business Process Management methodology include:

- Productivity efficiency can be achieved through automation of business processes and visibility into the progress of each business process. The automation minimizes manual intervention between systems and people, and people in different groups within the same or different organizations. The visibility into progress allows for the capability to monitor the business process and enables the organization to become more proactive in handling the business process.
- Business process effectiveness is improved by analyzing the current business process and handling the exceptions successfully. The analysis of the implemented business process, along with its execution metrics, can provide the necessary information to determine the effectiveness of the business processes. If there are any exceptions identified within the business process, these exceptions can be handled appropriately, depending on the exception condition.
- Adaptability to constant change is always a major benefit of using a BPM system. The ability to quickly update an existing business process or implement a new process helps business users. In addition, the rules for a business process can be updated and implemented in real-time without the need to redeploy the business process.
- Sustainable improvements during the iterative lifecycle of business processes are possible, so BPM is a continuum and not a “use-it-and-forget-it” approach.



What's your framework for performance management?

[Find out how ViryaNet can help.](#)

About ViryaNet

ViryaNet delivers mobile workforce management solutions that intelligently guide, automate, and optimize both simple and complex field service work, resulting in measurable business benefits. ViryaNet's products, pre-packaged solutions and people are recognized within the industry as innovative which in turn enables its' customers to be viewed as leaders within their respective industries. ViryaNet's G4 products specialize in the functions of scheduling and dispatching resources and enabling mobile field communication and are delivered in industry specific configurations. Embedding industry best practices and utilizing innovative technologies like ViryaNet's BPM Blueprint for Mobile Workforce Management™, Microsoft InfoPath® and device agnostic mobile solutions enable ViryaNet's products to be rapidly deployed and extended to support virtually any business process across a wide range of industries. ViryaNet is proud to call many of the world's leading utilities, the United States' largest pure rural telecommunications firm, the supermarkets most respected retailer, and North America's largest auto insurer as customers. ViryaNet has strong partnerships with leading platform and system integration companies that enable it to have a global presence. Headquartered in Westborough, MA, ViryaNet has additional offices in the United States and Israel. For more information [visit our website](#) or [follow us on twitter](#).

