

Steps to successfully select the right workforce management tool for your organisation

Industry Standard
Questions for Workforce
Management Solutions

Version 1.1

Introduction

This document is provided as an industry and best practice consolidation of the most effective questions asked during a service optimisation and workforce management solution selection process.

The purpose of this document is

For the short listed Systems Integrators and Software Vendors (the “Suppliers”) to have sufficiently detailed information about the specific requirements of the project, to confirm that they will be able to deliver the solution required, and therefore for them to decide if they wish to proceed further with the tendering process.

For the customer to obtain sufficiently detailed information from each Supplier to enable the IT Steering Group or the Business Owners to make the decision about which software solution will best deliver the stated objectives and which software implementer or Systems Integrator will be best able to support the implementation.

Download Editable RFP Template

After reviewing the example RFP questions below, you may like to use this template for your own organisations workforce management selection process. An editable template can be downloaded as follows where you can add your own questions or edit the example questions to suit your business requirements



Document Structure

This document is structured into the following categories to cover the functionalities which are to be satisfied by the vendor's solution to match the customer's business requirements.

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More information should be attained by defining levels of compliance for a given requirement. For example:

- (A) 'Off-the-shelf' - Implemented via administrative GUI interfaces with no development or programming effort.
- (B) Minor development required including potential programming.
- (C) Major development required
- (D) Requires modification to the core product.

Note:

The above classifications can be used for scoring tender response. Whilst every endeavour has been made to give Suppliers an accurate description of standard best practice business requirements, Suppliers should form their own conclusions about the best methods and resources needed to meet those requirements. The customer does not accept responsibility for the Supplier's assessment of the systems and services nor does it guarantee the completeness and accuracy of information provided to Suppliers. The customer has the right to add, delete or modify any of the business requirements.

SOLUTION ARCHITECTURE

Requirement
Solution can scale to multiple servers.
Multiple server scalability with capability for one enterprise view (i.e. no need to segment business units or territories onto hardware when application use increases).
Multiple server scalability whilst enabling resource sharing between business units and territories.
Multiple server scalability whilst enabling global visibility to business performance metrics.
Multiple server scalability whilst enabling segmentation of the business and control of user access relating to the business segment.
Provides high availability / fault tolerance without redundant servers.
Administration (settings, policies, etc.) of all servers should be managed from a centralised administrator interface. Thus, no need to manage administrative changes at multiple locations.
Specify typical and maximum large-scale scalability as measured in laboratory environments: Include hardware and software configuration, how often the optimisation is run, test tools, business processes simulated, test procedures, and response times for these business processes.
Specify typical and maximum large-scale deployments proven in the field: Include hardware and software configuration, how often the optimisation is run, business processes performed, measures monitored by the service business, and results of these measures.
Proven "Out of the Box" scalability for all users and integration activities (application server's HW utilisation is linear corresponding to the load it handles whilst the end-user performance remains the same).
Proven "Out of the Box" scalability for all users and integration activities (load balanced application servers' farm utilisation is linear corresponding to the load it handles whilst the end-user performance remains the same).
Hardware sizing can be calculated in advance for the initial production environment, future roll-outs and design changes.
Stress and recovery tests performed on the entire solution architecture.
Full customer scenario simulation can be performed prior to the go-live.
The product is certified to run in a server virtualisation environment (Citrix, VMWare).
On-premises or on-demand (hosted) deployment model

INTEGRATION

Requirement
System provides an open standard "Application Programming Interface" (API) exposing all of its functions for access from another system or external application. The web service API is a SOAP-compliant, object-oriented, cross-platform interface based on a Service Oriented Architecture (SOA).
System supports integration over HTTP.
Provides configurable 2-way integration either using XML messaging or Web Services.
System provides interfaces to configure integration messages (both for adjustments to incoming messages and the configuration of triggered outgoing messages).
Integration functionality provides for message adjustment as needed to conform to host system requirements.
Integrate with an optional graphical mapping tool for message mapping and translation.
Configuration interfaces to support integration with single and/or multiple systems.
Integration functionality allows for the configuration of message logging mechanisms.
Deployed integrations with common CRM / ERP systems.
List any standard integration 'adapters' between the vendor's system and others.
Seamless integration of the advanced scheduling functionality to the order entry system to allow automatic and optimised scheduling of field resources, real-time updates to scheduled activity, and dispatch of messages to the field device.
The ability to establish, administer and derive child properties from parent properties and use the functionality within the integration features. This facility is needed to manage job properties that are not captured in the order Entry system, but need to be considered for scheduling. For example, the order entry system may only provide the scheduling system with a type of job. To properly schedule this job, other factors need to be considered (e.g. skills, skill levels, cost of job, revenue for job, priority, estimated job duration, materials requirements, etc.), which are not available from the source system.
Workload forecasting, workforce capacity planning, shift planning, resource scheduling, mobility, location based services, customer interaction management, and reporting mechanisms should be fully integrated.
Supports standard security mechanisms in integration: standard ports, standard protocols (e.g. HTTPS), using the organisation's directory or defining a separate user directory, level of detail in defining authorisations, audit logs.
Provides a data import tool to facilitate the implementation process by quickly importing objects (for example, resources) and setting up reference data (for example, organisational hierarchy and skills).
Integration with SAP Solution Manager modules for monitoring purposes, including SAP Solution Manager Diagnostics, SAP Generic Request and Message Generator and SAP System Landscape Directory.

TRAINING

Requirement

Complete set of product documentation and training manuals, including User Guides, Programming Guides, Configuration Guides, Integration Guides, and Administration Guides for all products in the suite.

Structured training for the employees working with the new system or affected with the integration of new system.

Structured training for the administrators who will be required to administer the system (e.g. user access accounts, user permissions, rules & objectives logic tuning, user interface look and feel configuration, workflow processing and alerts configuration, system backup and restore, high availability administration, data archiving and purging, etc.).

Structured training for the developers who wish to extend the standard functionality of the system.

WORKLOAD FORECASTING

Requirement

Provide facilities to forecast work demand from historical data as well as consideration of business inputs to modify the forecast.

Ability to provide forecasts particular to each segment of the business, territory and product/demand type, thereby automatically detecting trends and seasonality patterns in the historical data, and applying these to improve forecast accuracy .

Ability to provide forecasts for various measures such as number of calls, travel time, fix time, MTBF (mean time between failures).

Provides automatic and user friendly way to detect outliers that are expected to reduce the quality of the forecast and to suggest a suitable adjustment to these values.

Ability to capture historic demand profile signatures as templates, for later use in developing and adjusting demand forecasts. For example, the effect on historical demand as a result of an unusual event (e.g. storm) should be possible to be captured and saved and reapplied at a future time when a similar event is anticipated to occur.

Ability to derive one forecast from another. This facility should allow derivation of high-level forecasts into lower level as well as aggregation of low-level forecasts to high level. Derived forecasts should take into consideration local trends and seasonality.

Ability to present a list of forecast assumptions relevant for each forecast scenario and to keep track of different assumptions created by different decision makers.

Ability to present a list of forecast assumptions relevant for a specific forecasted value. It should be clear what was the original starting point (the value of the mathematical forecast), what was changed and why.

Facilities for automatic charting of the historic data, and forecasts, to include representation of data quality for trend analysis.

Ability to automatically produce reports on forecasts in MS Excel format for distribution and to directly print the graphs and data from the UI.

Automatically capture previous values for any adjusted data to assist in tracking changes.

Ability to update the forecast as new data is made available to track progression and improve the quality of the forecast.

Ability to update the forecast in various ways:
- Simple change to graphical or tabular data values
- Growth rate change
- Using preconfigured cases that may include many different changes.

Ability to create forecasting scenarios applicable to conditions such as territory, time period (e.g. summer months vs. winter months), demand type, etc.

Ability to export baseline demand forecast and/or forecast scenarios into a resource capacity planning tool for rightsizing the workforce to the forecasted workload.

WORKLOAD FORECASTING CONT.

Requirement
Automated forecasting over large numbers of different "filters" – e.g. all work types, for all organisational levels etc. – so that all the forecasts are coordinated with each other and all are ready for instant drill-down or roll-up.
Ability to handle even small amounts of data (short history, sparse data where many of the values are zero)
Ability to support and recognise new products / demand types with partial history.
Ability to detect and handle trends which appear during the history period (e.g. if a certain demand curve used to be flat but a few months ago started rising, give higher significance to recent events).
Ability to deal with "holes" in the historical data in cases where data does not exist.
Be able to forecast on yearly, quarterly, monthly, weekly, daily and hourly resolutions.
Forecast horizon should not be limited (5-10 years).
Ability to easily configure the forecasting tool (e.g. forecasting algorithms, demand measures and business events) to conform to the customer's business rather than forcing the customer to conform to the tool.
Ability to measure and present the error (accuracy) of the forecast.
Ability to run more time consuming forecasting related operations in an off-line mode.
Provide a rich graph functionality to support the forecaster's evaluation process.

WORKFORCE PLANNING

Requirement

Provide an API for real-time integration with forecasting tools and back-office applications, allowing automatic upload/download of forecast information for use in the planning tool.

Provide an automatic workforce-to-workload allocation tool, using optimisation routines. This tool must present a user friendly gap analysis showing resources against demand, based on skills, territory, and availability. Include support for different resources with different skill sets and different demands that require different skills.

Ability to develop multiple plans (scenarios) for meeting the projected demand (e.g. use of overtime, use of contractors, effect of employee training, effect of sharing of resources between districts).

In cases where there is a gap between demand and available capacity it should be possible to use the company policy of closing this gap (e.g. first use overtime up to a certain % of the availability, then cancel team meetings, then use contractors up to a certain budget).

Note: some actions may not be valid for certain time horizons: for example it takes at least 3 months to train an employee and it takes 6 months to recruit an employee.

Provide a user friendly and intuitive, time-based graphical layout to create and manage work plans.

Provide intuitive, instant, automatic highlighting of resource shortages and surpluses months and years in advance.

Provide access to resource profiles for managing skills, territory, and other resource attributes from within the plan to help develop "What If" scenarios for best meeting the business demands.

Provide a resource calendar editor to manage shifts across various time periods and resources.

Provide "what-if" scenarios to compare different approaches to planning and their results.

Provide an easy to use and intuitive tool to compare between scenarios. It should be clear what is the expected service level vs. cost in each scenario. Present the derived cost and revenues of each scenario.

Provide a capability for the planner to easily view and manage the planned absences of the workforce.

Provide a capability for the planner to easily graph and chart workforce utilisation and workload percentage allocations, view specific planned allocations, etc.

Provide the ability to create parent and child resource capacity plans. For example, the tool should have the ability for planners to manage territory plans, time-based plans (Q1, Q2, etc.) with the capability to roll up to the master plan level.

Provide the ability to plan capacity limitations that will have an effect on the scheduling system in order control the service level of different products/demand types. The system should provide an automatic way to balance the available capacity between different products/demand types.

WORKFORCE PLANNING CONT.

Requirement

Provide the ability to change the expected demand based on real facts coming from the scheduling system and previous experience about the "fill rate".

Provide the ability to manage subcontractor usage. The system should:

- Define the available capacity per contractor, time, and skill
- Define the contract type (pay per use, early commitment for certain capacity)
- The system should recommend the optimal usage level based on the contractor's availability, cost, internal capacity and demand

Provide the ability to manage a training program. The system should:

- Find out what is the optimal skills mix for each territory
- Define the current skills mix and the gap
- Provide the tentative training program (who should be trained, when and for what skills) in order to achieve the optimal skills mix

Provide the ability to manage recruiting and retiring. The system should:

- Find the optimal staffing level for each territory
- Define the current and future situation taking into account expected retirements
- Provide the tentative recruiting program (how many resources should be recruited, when, where and with what skills)

Provide tools for leave management. The system should:

- Define what is the allowed leave capacity per time and territory based on the available capacity and the demand
- Analyze the impact of having X resources unavailable during a certain time period within different scenarios

Handle changes in skills and availability which occur during the planning period (e.g. new hires, resources gaining or losing certifications).

Be able to plan using yearly, quarterly, monthly, weekly, daily and hourly resolution.

The planning horizon should not be limited (5-10 years).

Provide the ability to submit approved resource plans and/or "what-if" scenarios to the scheduling engine in order to facilitate the scheduling of work according to the approved plan.

Ability to run more time consuming planning related operations in an off-line mode.

Ability to export a plan or scenario from the tool into a spreadsheet, including demands, resources, allocations, comments and cost/revenue information.

RESOURCE SHIFT PLANNING

Requirement
Provide the ability to proactively and reactively manage resources to achieve efficiencies for resource management.
Be easily configured to represent the current organisational hierarchy, and any future changes.
The availability of a demand analysis modelling tool.
Be easily configured to utilise, update and manage detailed demand analysis data.
Ability to define shift patterns. A shift pattern is an array of shifts that will be used as the basis to assign shifts to employees in a rotating shift process. Each shift pattern will allow the definition of: <ol style="list-style-type: none">1. Length of the rota e.g. 17 days2. The number of employees/groups this pattern is applicable e.g. 20 employees, 6 groups of employees.3. Off Set (e.g. 2 days) to set the rotation between the groups or the individuals
Ability to employ rotating shift patterns on employees or a group of employees for a horizon of couple of weeks up to a year and a half.
Automatic shift rotation - Ability to rotate shifts via an automated mechanism to deploy shifts to groups and employees for a short to long term horizon (up to 100 employees and up to a horizon of a year and a half). The rotating process should distribute the workload to all the employees/group with fairness taken into account.
Ability to make manual changes to the shifts e.g. replacing the shift with another shift, creating shifts ad-hoc, copy shifts of one employee to another etc.
Ability for shift to include additional information e.g. comment, break time during shift.
Ability for employee to work on multiple shifts in a day.
Ability to define shifts that cross midnight e.g. Shifts can start on day one and finish on day two (cross midnight) e.g. 22:00 on day one till 05:00 on day two.
Ability for the shift planner to assign each shift with a status that represents its state along its lifecycle.
The list of statuses is subjected to local configuration.
The system should allow compliance with the organisational policy and with regulation. including: <ol style="list-style-type: none">a. As a general guideline all the shifts should comply with the organisational policy and with the regulation.b. Shift planner should be notified about exceptions and should be able to override the policy.c. Rule violations (indication for non-compliance with the policy or the regulation) will be applicable for:<ol style="list-style-type: none">i. Shift Patternsii. Shifts (at the Group level)iii. Shifts (at the individual employee level)

RESOURCE SHIFT PLANNING CONT.

Requirement

Ability to define on-call shifts with a different look and feel (colours / icons). This is useful in allowing the shift planner to distinguish easily between on-call shifts and other standard shifts.

Ability to add one or more overtime intervals (shifts) to an employee/group in a specific day.

Ability to define overtime shifts during a rest day.

Ability to define overtime shifts with a different look and feel (colours / icons). This is useful in allowing the shift planner to distinguish easily between overtime shifts and the other standard shifts.

System should proactively highlight conflicts in the employee shifts as a result of added overtime.

System should have the ability to allow checking rules manually and/or automatically at the end of adding the overtime.

Provisioning of a web application with "read only" privileges about the roster such that additional stakeholders (managers in all levels) will be able to view the roster. These stakeholders will need to communicate their comments to the shift planner as they will be the only user who will be able to change the roster. In case the backend system supports workflow types of approval processes the "read only" web client can be embedded in that system to support an external approving process.

If demands are used, the system must be able to provide coverage analysis reporting:

1. High level indication of coverage when viewing shifts - for every day indicate the total capacity shortage and the total extra capacity.
2. Dedicated graph view of coverage that can be viewed in various time resolutions

The contract is a list of rules and regulation defining the valid working hour. This includes, for example, maximal working hour per day or week, overtime regulations, rest time etc. If this information is stored and owned by other HR system the system must have seamless integration with the HR system.

The system should allow the definition of a hierarchy of contracts. E.g. general contract in the organisational level, then a specific contract for the unit and then a personal contract.

After long leave, due to change in the health state or an injury an employee may need to return back to work gradually and typically this period is known as Restricted Duty. During Restricted Duty, the employee is available to work less time than their standard contract but for all payment purposes they will get the standard payments.

Ability for the shift planner to identify Restricted Duty shifts.

Non-Availability (NA) represents opportunistic and planned absences of employees beyond the standard availability as the employee's contract states. NA may be of various types e.g. Annual Leave, Training, Sick Leave, and Court Warning.

The system must have the ability to visualise non-availabilities.

RESOURCE SHIFT PLANNING CONT.

Requirement
The system must allow the creation of new non-availabilities.
System must have the ability to update the backend system with any added/updated/deleted non-availabilities.
System must have the ability for the shift planner to update employee characteristics
Shift planner assigns employees to shifts months (up to a year and a half) in advance. With that horizon in mind the shift planner must take into considerations vacancies.
System should have the ability to consider open positions as available capacity in the shift planning process
System should display the open position differently from employees as well as show the different states of the new hire availability
System should provide the ability to select an employee and assign them with the shifts of the absent employee
System should allow the Acting Up employee can be from the same organisation unit of the absent employee or from a different organisational unit of the organisation.
System should show who is now acting up out of the list of employees in the group.
System should show on the absent employee, the fact that someone is acting up for them.
System must have the ability to update the backend system with any added/updated/deleted acting up.
System should provide the ability to relocate an employee for a defined period of time.
Relocation functionality to assist the shift planner when temporarily moving employees between organisation units in order to address the following cases: <ul style="list-style-type: none"> a. A coverage gap due to insufficient available employees to attend the anticipated demands. b. A specific request of an employee to work in a different organisation unit. Search for employee who holds specific attributes (e.g. Skills, Position). Search beyond the organisation unit. In addition allow starting the process with a specific employee (i.e. following the employee's request to be relocated). c. In the case of one-off events, allow the creation of temporary organisation units and move open positions from other org units. Later on and close to the time the event starts staff (relocate) them with employees.
System should provide the ability to relocate an employee for a defined period of time.
System should ensure that when an employee is relocated that they cannot contribute to their original organisation unit and thus they are marked as non-available during the relocation period
The solution must support the temporary promotion of employees (acting up) and moving them between organisation units.

RESOURCE SHIFT PLANNING CONT.

Requirement

System should have the ability to handle employees that have time-phase locations. The change in the location can be effective in the future date (e.g. a month ahead). Until that date, the employee remains effective in his original organisation unit and keeps their original position. As soon as the effective date arrives the employee becomes non-available in the original org unit and available in the new organisation unit.

System should allow an employee to have one or more of the following characteristics:

- a. Association to multiple organisation units
- b. Association with multiple sets of positions
- c. Association with multiple contracts

System should ensure that shift planners can see only the relevant segment that they are managing e.g. if the shift planner is granted to see only A, they will see only the employee and their shifts in the context of A and nothing about B.

Support for Business Rules: Maximum working time - Example: 10 hours per day, 48 hours per week including overtime. Monthly and yearly limits are derived from the daily and weekly limits.

Support for Business Rules: Working time average - Example: 42 hours per week in average over 6 weeks (rolling), 8 hours per day in average over 5 weeks.

Support for Business Rules: Minimum working time -Example: A minimum of 37 hours per week, minimum 4 hours per day. Monthly and yearly limits are derived from the daily and weekly limits.

Support for Business Rules: Minimum time between shifts - Example: A rest of 11 hours between the night shift and the day shift of the next day, minimum accumulated rest time of 24 hours per rolling seven days, 1 day off each week, 2 days off every four nights.

Support for Business Rules: Maximum overtime - Example: 20 hours per calendar month, 40 hours per year. A year can be calendar year or a year that starts for example in April (till March 31). The maximum working hours rule covers daily and weekly limits.

Special rule for pain shifts - Example: Maximum 15 Sunday shifts per calendar year. A Sunday shift is a shift that starts during Sunday (calendar time), not more than 5 consecutive night shifts, some employees (e.g. civilians) don't work during public holidays.

Special rules for restricted duty - Example: after injury an employee should work limited number of hours that will change gradually until the employee returns to his standard availability.

System should include a platform for local development of additional business rules subject to local needs.

Ability to define, update and delete event templates, each template includes the organisation tree for the event and resources requirements (e.g. 2 resources of type A and 1 team of type B).

Ability to create a new event based on a selected template. The system will automatically create the temporary organisational structure and the required resources.

RESOURCE SHIFT PLANNING CONT.

Requirement

Ability to manually change the resource requirements and add comments.

Ability to search for available resources with the required skill and experience / seniority, select resources from this list and allocate them to the open position

An allocated resource will not be considered as an available resource in their original location for the event period.

System should allow for configuration of parameters.

System should allow for the management of user access. This should include managing of users, the data each user can view, and the activities each user can perform through the UI by configuring the menu options that are available to them.

System should allow the deletion of redundant historical records. The configurable purging should allow the deletion of Employees, Positions, Shifts, Acting Up, Relocations and Organisation Structure

JOB & RESOURCE DEFINITION

Requirement

Provide detailed information on the tools provided to capture any property required to meet the business needs through configurable interfaces. Capability should allow the addition of properties post-go-live to account for changes in the business requirements.

Capabilities to configure and derive job duration unique for each job type. Receiving durations from host system as well as deriving durations from within the scheduling functionality based on historical data, seasonality and trend.

Ability to define any variety of job date/time constraints and enforce business logic against the properties.

Define time dependencies between tasks:

- Start to start with specified gap
- Start to finish with specified gap
- Same day

Ability to define and manage job priority when developing and managing the schedule.

Describe the capability to manage job location and use it within the scheduling logic.

Ability to specify a specific resource to be assigned to or exclude from a job.

Ability to specify a preferred resource for assignment consideration to a job.

Define resource dependencies between tasks (e.g. the same resource must be assigned to such dependent tasks).

Ability to configure any property required describing resources for use in the scheduling, dispatch and reporting functionality. Properties should be either simple (e.g. Boolean, long, string, from selection lists) or complex (single properties containing multiple sub properties).

Provide the facility to automatically schedule jobs requiring multiple resources.

Provide the ability to schedule high volume/short duration jobs as well as multi-day jobs.

Provide the ability to assign jobs to multi-person crews, including multiple crew assignment to the same job.

Provide the capability to require multiple skill requirements on a job, including skill level and skill efficiency considerations.

Provide the capability to define subcontractors – a bulk of resources that are not managed individually. This should include the following:

- Ability to define the available capacity per time period, skill and location
- Allow to define the cost of subcontractor usage and take it into account when creating the schedule.

Provide the capability to specify resource skillsets, including skill level and skill efficiency. The resource skill efficiency should be able to dynamically adjust the assigned duration of given job.

JOB & RESOURCE DEFINITION CONT.

Requirement

When using crews, allow a single resource to be both part of a crew and also be scheduled separately, so that the schedule can be optimised both for tasks which require crews and for tasks which require a single-person dispatch.

Provide the capability of derived task attributes – for example the task type will derive the task duration, SLA and task priority.

Provide the ability to filter and search jobs according to certain criteria.

Provide the ability to move work forward – enable to focus on future jobs and schedule them for NOW

Provide the ability to send extra work for idle resource (push/pull mode).

QUOTING AVAILABILITY AND BOOKING APPOINTMENTS

Requirement
Provide the ability to offer customer service appointments during the initial customer call.
Customer appointments consider the existing schedule in terms of location, skills, and other criteria when searching for available time windows.
Customer appointment options (i.e. time slots) can be ranked and prioritised in a sorted list according to objectives and policies most beneficial to the business. For example, customer appointment options sorted by cost or other criteria such as travel or resource load.
The solution should automatically attempt to schedule all service requests in a remote area for the same time period (e.g. day) so that a resource's productivity is maximised when travelling to remote areas.
Support for blocking and reserving of availability to meet the specific job requirements against the individual resource capabilities and availability.
Customer appointments consider the existing schedule in terms of location, skills, and other criteria when searching for available time windows. Booking of appointments should conform with scheduling constraints, objectives and value of the business.
Booking of appointments complies with the business goals (e.g. minimise travel, schedule high priority jobs over low priority, minimise use of overtime, etc.). Flexibility should be provided within the application to extend the business goals as well as consideration of relative goal importance.
The ability should be provided to override the business logic and schedule activity automatically based on job criticality. This feature should allow configuration of when the business logic can be relaxed and for what cases.
Customer appointments utilise different policies for providing customer appointments based on customer type or importance. For example, different business logic should be deployed automatically, based on pre-defined configurations, to schedule jobs with logic particular to customer details, date/time and/or job location.
Booking of an appointment should allow the remote user to reserve specific resources' time – effectively managing a dynamic schedule for each resource.
Provide capability to over-book or under-book resources.
Provide capability to define scheduling and appointment booking logic based on product type, job type, territory, market, time of the day or year, resource type (e.g. internal tech vs. contractor), and other configurable criteria.
Provide the ability to book multiple stages of one customer call in one "shot".
Provide configurable length appointment windows (e.g. 2 hrs, 4 hours, all day, AM, PM, etc.) based on business policies.

SCHEDULING AND MAINTENANCE

Requirement
Support for scheduling combination of high volume/short duration jobs as well as complex, multi-staged, multi-day, multi-person jobs.
Provide a consolidated view of the schedule with dynamic access to availability.
Ability to configure user interface display hierarchy according to geography, product line, division, or other criteria.
Automatic optimised scheduling, configurable against any segment of the business over any timeframe.
Provide intuitive user interface wizards for managing the schedule / resolving conflicts and providing interactive access to availability.
Provide the ability to have in-day optimisation, enabling automatic schedule for exceptions that occur during the day
Provide interactive warning notifications when violating a predefined business policy.
Provide configurable workflows to manage proper job lifecycle.
Automatically schedule jobs requiring multiple resources, each with different skill requirements.
Automatically schedule jobs requiring multiple stages, including requirements for the same resource or different resources for each stage.
Support automatic scheduling of all of the following multiple-stage task time dependencies: <ul style="list-style-type: none">- Start to start with specified gap- Start to finish with specified gap- Same day
Provide details on the ability to support varying workflows based on type of work and/or resource.
Describe the capabilities to manage varying types of work - Preventative Maintenance, Faults, Planned and Unplanned Work, Trouble calls, Project Work, Emergency Work, Break-Fix Work, Installations, multi-staged work, etc. - within the single scheduling system.
Automatically schedule jobs spanning over non-working periods (i.e. multi-day tasks) including overnight, weekends, and over planned breaks.
When scheduling jobs that span over non-working periods, automatically adjust the length of the assignment to preserve the accurate job duration.
Should support the configurable functionality to automatically insert high priority jobs into the schedule when encountered. The schedule should be automatically updated according to the business goals and configured constraints.

SCHEDULING AND MAINTENANCE CONT.

Requirement

Support both manual and optimised scheduling from direct user interaction. Examples:

- 'Drag-and-Drop' method: shows relevant rule violations of the scheduling policy when dragging a task to a resource
- Scheduling a task based on candidate suitability: resources that have the skills required for the selected task are automatically highlighted on the Gantt Chart facilitating decision making
- Selecting a task or multiple tasks and automatically and optimally scheduling them all with a single click

Provide automatic notification of conflicts based on events such as delays in resource arrival, longer than expected durations, sickness, and other unexpected events.

Enable varying workflows based on any property(s) of the job.

Enable automatic 'pushing' of high priority work into a schedule at the expense of other lower priority work. Definition of high and low priority work should be by individual properties or combinations of properties, configurable within the system.

Low priority projects 'pushed' out by high priority jobs can be automatically or manually rescheduled.

Solution automatically relaxes specific scheduling constraints based on pre-defined policies such as allowing weekend overtime only when high priority jobs cannot be scheduled within regular working hours. Configuration settings should allow for the definition of a business logic hierarchy to enforce a relaxation chain as needed to schedule.

Automatically consider cost of service when assigning resources.

Automatically consider job revenue when scheduling.

Simultaneously consider multiple conflicting constraints or business goals when scheduling to provide the best overall assignment.

Client user can invoke automatic scheduling upon demand through simple mouse-clicks.

Client user can adjust assignment duration, planned start and/or finish, reschedule jobs, and perform other critical schedule adjustments using 'drag-and-drop' methods.

Scheduler and dispatcher user interface is provided with advanced Search, Sort and Filter features to quickly access required data.

Client interface features are managed by a centralised administrator interface with the capability to adjust configurations by the end user, while completely governed within the centralised administrator console.

Administration should be managed on individual and/or group user profiles.

Configurable alerting mechanisms should be provided to allow complete administrative definition of alerts and triggering of notifications.

SCHEDULING AND MAINTENANCE CONT.

Requirement

Provide automatic notification of situations where customer service levels are jeopardised (e.g. a resource is late arriving to the previous service request, resulting in increased likelihood of missing the committed appointment window).

Alert notifications must include the ability to trigger email and message notifications, job property adjustments (e.g. increase priority), escalate to higher authority, and the ability to add custom extensions as desired.

Automatically resolve jeopardy situations, selecting the next best resource and/or time, while attempting to preserve customer commitments.

Enable configurable alerting functionality to allow definition of various alerts to notify Schedulers of existing and potential scheduling conflicts (missed SLA's, jobs running late, etc.). Notification features will include the dispatch of messages to the call centre system, delivery of SMS messages to the field resources, email notifications, as well as updates within the Schedule application.

Ability to incorporate the 'common sense' that dispatchers use. For example, if an unscheduled job is slightly longer than the time available to allocate to it, the scheduling solution should make it possible to automatically relax the constraint and schedule this job. In other words, a degree of elasticity should be incorporated when confronting scheduling constraints.

Provide visibility of the real-time service KPIs (for example % utilisation).

Provide "plan vs. actual" analysis of the schedule in order to improve tactical schedule planning.

Enable various types of users, such as dispatchers, field supervisors, and contractor dispatchers, to remotely access key scheduling functionality via a web based application.

User can quickly update any job property for multiple jobs at the same time without opening each job's details.

User can identify gaps in a resource's schedule and assign appropriate tasks to those time intervals by utilising an interactive wizard.

GEOGRAPHIC INFORMATION SYSTEMS

Requirement
Provide integrated 'off-the-shelf' GIS module for travel time optimisation when scheduling.
Provide address-level geo-coding of customer and resource locations.
Automatically route resource assignments according to real-road travel time.
Automatically consider posted speed limits when assigning and routing assignments.
Automatically consider one-way streets and no u-turn driving restrictions when scheduling.
Automatically consider landmarks and construction obstacles when scheduling.
Use Street Level Routing in batch tasks scheduling.
Use Street Level Routing in background scheduling optimisation – real time
Provide client map displays for geographical viewing of customer service requests and resources.
Provide client map displays of resource routes including assignment order.
Provide detailed turn-by-turn driving directions for resource routes. Driving directions should be interactively accessible to the dispatcher as well as the field resource via the mobile device.
Ability to integrate the scheduling solution with 3rd party GIS providers for all relevant GIS functions: mapping, routing and geo-coding. It is possible to implement some or all of the functions in order to use the services offered by the GIS provider.
List all the GIS adapters and methods in which the solution can integrate.

TIME ZONE SUPPORT

Requirement
Ability to properly identify local time zones.
Properly identify / accommodate daylight savings time.
Support for resources crossing multiple time zones.
Ability to align customer and resource time zones in scheduling and appointment booking
Ability to support non-integer time zones (e.g. Newfoundland, CAN -3:30 GMT).

SUPPORT OPTIMISATION PARAMETERS

Requirement
Support both automatic batch, and automatic continuous optimised scheduling.
Enable varying workflows based on the type of job, job status, or the nature of the unexpected event.
Provide automatic re-scheduling based on daily events such as: <ul style="list-style-type: none">- Late or early resource arrival- Late or early task completion- Sickness, and other unexpected events- Job cancellation- Customer is not at home- Fault diagnosis (that requires another visit)
Enable automatic 'pushing' of high priority jobs into a schedule at the expense of other lower priority jobs.
Low priority jobs 'pushed' by high priority jobs are automatically rescheduled.
Solution automatically relaxes specific scheduling constraints based on pre-defined policies such as allowing overtime only when high priority jobs cannot be scheduled within regular working hours.
Provide flexibility to add optimisation parameters as needed through configurable interfaces, including new properties, property lists, and scheduling logic.
Scheduling logic (constraints, objectives and business value) should be configuration-based on defined constraint and objective categories, with the flexibility to configure additional logic through the life of the application.
Constraint and Objective scheduling logic should be configurable to pertain to particular segments of the business allowing the business to define variable scheduling logic to apply to its different segments of the business, within a single scheduling application.
Automatically consider the company business objectives, for example: <ul style="list-style-type: none">- Cost reduction- Increase service level- Growth- Regulatory compliance
Optimisation functionality should allow for a scheduling workflow consisting of ordered logic policies to allow automatic relaxation of logic policy based on a structured configuration that matches the policies of the business.

SUPPORT OPTIMISATION PARAMETERS CONT

Requirement

Consideration of the optimisation functionality should include (but not be limited to the following):

- Skill requirement
- Any number of date/time constraints (e.g. Service Level Agreements)
- Travel time based on driving time for local jobs
- Cost of travel
- Cost of resource
- Overtime cost
- Subcontractors usage cost
- Resource's travel policies (e.g. limit extent of travel based on individual resource properties)
- Consideration of like location (e.g. bringing jobs located at the same site together to ensure efficient use of resources).
- Balance of workload between resources
- Job priority
- Job revenue/expense values
- Job duration
- Preference for specific resources
- Time dependencies between tasks
- Resource dependencies between tasks (e.g. same resource does both tasks)
- Bonuses and penalties of the different SLAs
- Required van parts
- Depot visit

Ability to relax the current geographic boundaries to help produce a more optimal schedule. For example, if a qualified resource outside of district boundaries is available and closer to a job, they should be scheduled regardless of the organisational boundaries.

Scheduling and optimisation functionality should allow for configurable elasticity within the business logic. This feature should allow business logic to be configured in the system, with the capability to relax defined boundaries by specified amounts to attain a schedule meeting commonsense logic (e.g. when required, allow the use of specified amounts of overtime to make a practical use of the remaining field service availability).

Automatically and/or interactively "repair" crew assignments when one of the people assigned to the crew is unable to participate in one or more of the crew's assignments.

Support the dispatch of one person from within a crew to a simple short-term task, if the crew's assignment allows it.

Take steps to avoid multiple visits to the same location: For example, if a resource is dispatched to repair a fault in some asset, and if this asset requires Preventive Maintenance in the near future, bring forwards the date for the Preventive Maintenance to avoid a repeat visit.

SUPPORT OPTIMISATION PARAMETERS CONT

Requirement

Scheduling optimisation can be configured to consider availability of parts, tools and equipment required to perform a job, and either dispatch the job to a resource or crew which has these, or schedule the delivery of the parts/tools/equipment to the dispatched teams. This includes scheduling the sharing of a scarce resource (e.g. construction equipment) between crews, when the resource is only required for parts of the duration of each crew's task.

MODIFICATION OF BUSINESS POLICIES

Requirement
Scheduling policies and business processing workflows are configured using intuitive GUI administrative screens.
Varying scheduling workflows and policies can be defined based on differing geographic territories.
Varying scheduling workflows and policies can be defined based on differing business units or product types.
Varying scheduling workflows and policies can be defined based on the job and resource characteristics other than territory or business unit. For example, different scheduling policies can be used at different times of the day/night, or year.
Combinations of criteria (e.g. territory and business unit and resource type) can be used to define varying workflows and policies for scheduling.
System automatically adjusts the duration of assignments based on resource efficiency.
An administrator can switch between scheduling and workflow policies in 'run-time' to accommodate for changing business conditions (e.g. inclement weather, excessive workload in certain territories, etc.).
System allows for automatic scheduling of flexible lunch breaks (e.g. 1 hour break between 11 AM and 2 PM) for scheduled personnel resources.
Provide an administration tool to support schedule tuning in real time, where each suggested schedule can include different business objective weights, and the results are presented according to KPI values.

MOBILE APPLICATIONS

Requirement
Provide automatic dispatch of assigned work to field resources.
Configurable dispatch functionality to automatically trigger notification of assigned tasks to field resources.
Provide real-time updates of field activity.
Enable two-way communications for dispatching jobs to field resources and receiving updates.
Provide configurable workflow requiring field resource acknowledgement of the assignment within x minutes of receipt. If within x minutes the assignment has not been acknowledged, the workflow will reassign to the next best field resource.
Allow only specific job status transition flows as configured and that make business sense at the current state of the job. For example, do not allow reverse status change from "onsite" to "enroute"; allow status change from "onsite" to "completed".
Ability to integrate mobile application to third party logistics and parts inventory systems.
Ability to integrate mobile application to third party time reporting systems.
Ability to work in off-line mode when out of coverage. For example, allows viewing job information and providing status updates when out of wireless coverage.
Ability to present different forms based on any job field – including different behaviour, validations, expressions and layout.
Ability to integrate with third party GIS vendors and tools (e.g. ESRI).
Ability to integrate with device buttons: joystick, arrows, soft keys, enter – all in order to enable single handed navigation.
Ability to view multi-day task in single day view.
Ability to support timesheets.
The timesheet capability should support basic clock-in and clock-out functionality.
The timesheet capability should support the automatic population of timesheet information based on the work carried out by the mobile worker.
The timesheet capability should allow the mobile user to amend the timesheet details.
Ability to support team timesheets by letting the team leader complete the details of their entire team.
Capture of actual start and finish times for measurement and analysis.

MOBILE APPLICATIONS CONT.

Requirement
The mobile solution should allow the field worker to create absence requests (e.g. holiday, training, sickness, meetings, etc.).
The absences and non-working time should be updated to the scheduling system to avoid the field worker being assigned work during these periods.
The mobile solution should allow the field worker to raise request s for tools, uniforms, vehicle repairs, etc.
Ability to use single click buttons that perform frequently used actions such as: change of status, ask for driving directions, call a customer, etc.
Ability to send and receive bi-directional messages to the dispatchers and between resources.
Automatic dispatch of required parts information.
The mobile solution should support risk assessments before work can commence.
The mobile solution should support a number of use cases including equipment, asset and site inspections.
The mobile solution should support dynamic forms so that the fields displayed or the values listed are based on previously answered questions.
The mobile solution should support the ability to add functionality to the application without requiring customisation of the core product.
The mobile solution should support signature capture.
The mobile solution should support customer receipt printing.
The mobile solution should support quotation creation and invoice calculation.
The mobile solution should support bi-directional integration with Asset Management systems.
The mobile solution should support bi-directional integration with CRM systems.
The mobile solution should support bi-directional integration with Billing / Finance systems.
The mobile solution should support bi-directional integration with HR systems.
The mobile solution should support bi-directional integration with Parts/Inventory systems.
The mobile solution should support access to asset history.
The mobile solution should support access to site history.
The mobile solution should support access to part history.

MOBILE APPLICATIONS CONT.

Requirement
The mobile solution should support access to machine history.
The mobile solution should support access to customer history.
The mobile solution should support van inventory including stock receipt and use.
The mobile solution should support parts replacement and re-shipping updates.
The mobile solution should support access to technical documentation.
Optimised for low-bandwidth transmission.
Secure connections to mobile server.
Support for simultaneous use of multiple types of devices.
Integration with scheduling for automatic dispatch.
Complete alignment of scheduling/dispatch configuration with mobile configuration: All data, terminology, validation, workflows etc. are configured in one place and affect the process for all users and access methods (e.g. dispatcher's console, resource's mobile device).
Provide location based services to track resource location in real-time.
Utilise location based services tracking of resource location to make real-time location based scheduling decisions.
Provide indications in case of inconsistencies regarding resources locations (planned vs. actual location).
Provide emergency scheduling capabilities based on the resource's current location and arrival time.
Provide early warning on late arrivals according to real time data.
The system should allow the configuration of data structures to represent asset hierarchies and other complex relationship based data.
The system should support smartphones using a zero footprint solution that allows offline working.
The mobile solution should include the capability to book appointments directly from the mobile device.
Field users can reject work and force its reassignment but are required to log a reason for rejection.
Ability to capture inspection and condition data on the mobile device (e.g. asset data).
Ability to send attachment from the mobile device (e.g. images).

MOBILE APPLICATIONS CONT.

Requirement
Ability to send additional information out to the field user once an activity has already been dispatched (e.g. maps, forms, data etc.).
The mobile solution must have the facility to provide electronic surveys, customer questionnaires, etc. via configurable forms.
The user must be able to create follow on work from the original work order on the device.
Ability to complete a risk assessment on a mobile device.
The mobile solution should support Microsoft Windows PC operating systems (e.g. XP, Vista, 7).
The mobile solution should support the Microsoft Windows Mobile operating system.
The mobile solution should support Apple iOS devices (e.g. iPhone and iPad).
The mobile solution should support Google Android operating system based devices including smartphone and tablet form factors.
The mobile solution should support BlackBerry devices.
Do you implement push capability?
Ability to provide drivers with a start of day vehicle and safety equipment checklist.
How would your mobile solution support a supervisor in the field managing the work allocated to his team?
Ability for the user to log into the mobile application and access the GIS component and look for unallocated maintenance orders.
View location of nearby work orders, crews and engineers on the mobile GIS application.
Ability to search for orders based on any criteria including status and a particular geographic area from the mobile device.
Ability to sort and filter by any of the properties including status, priority due date and task type.
Do you have certified adaptors to enterprise scheduling systems?
Ability to support companion devices, e.g. An engineer uses both a laptop for capturing large volumes of data and a PDA for use in confined spaces with all information automatically synchronised between the server and the two devices.
Does your mobile application have the ability to send engineer location to the scheduling system for optimisation?

MOBILE APPLICATIONS CONT.

Requirement
Does your mobile application have the ability to send automatic status updates based on location (e.g. onsite, offsite)?
Ability for a supervisor to manage orders that go into Jeopardy from the field.
Does your mobile solution allow field supervisors to deal with exceptions in the field such as promoting crew members to crew leaders in case of unplanned absences?
Does your mobile solution allow field supervisors to modify the allocation of engineers to shifts to deal with emergency situations?
The ability to locate nearest engineer who has the available parts to support work execution from the mobile.
The ability to receive bundles of work (work pack) that contains many operations? Unbundle each operations on the mobile device. E.g., meter reading jobs, same site jobs, etc
Does your mobile provide the ability for the scheduling system to be able to interrogate the connectivity status before assigning and dispatching work orders, i.e. only send jobs from the scheduling system to the mobile if the mobile user is logged in and is connected?
The ability for the supervisor to check the location of his crew members on the mobile device
The ability for an engineer to locate a colleague on his mobile who has the required skills to support completion of a work in the field.
Support for building a mobile form without writing any code and deploying the form to both laptops and PDA's automatically.

SERVICE PERFORMANCE ANALYSIS

Requirement
Provides the ability to interactively generate reports.
Provides a dashboard view of KPIs.
Provides drill-down analysis by selectable properties including: <ul style="list-style-type: none"> - Job type - Time frame - Geography - Priority
Drill-down analysis should be supported from the organisational hierarchy level all the way down to the single resource level to a single day.
Support alerts when one or more KPIs are close to the "red zone".
Support the ability to identify problems (areas where KPIs are out of target).
Provides flexibility to measure various resource-related activities, including: <ul style="list-style-type: none"> - Utilisation - Overtime - Productivity - Mileage - Travel time
Provides the flexibility to measure job related reports, including: <ul style="list-style-type: none"> - Business volume - Business rule violations - Skills violations - Cost of jobs - SLA Compliance - Response time
Support the ability to find the source of the problem.
Provide features to allow end users to dynamically generate new reports interactively.
Allows distribution of reports over an intranet or email.
Ability to generate different reports on different customers/network operators.
Provide real-time, on-line KPI monitor within the scheduling user interface to provide system users with up-to-date (and forward-looking) information on resource utilisation, job volumes, business rule violations, with the flexibility to extend reports and govern access.
List the out-of-the-box operational and analytical reports as well as monitored KPIs, explain how they are already configured to support standard and best practices, and explain how to modify and extend the available options.

CONTRACTOR MANAGEMENT

Requirement
Select contractors in real-time based on cost & availability.
Provide an interface for communication of contractor capacity by time, territory, job type, & other criteria.
Provide commitments to customers for internal and/or contractor resources.
Analyse & compare contractor performance by territory, job type, or other parameters.
Automated dispatch to internal and/or contractor resources.
Track service delivery provided by contractors in real-time.
Schedule contractors with either exact or bulk capacity definition.
Optimise dedicated or shared contractors.
Provide common terminology for equipment, service types & skills among contractors.
Provide support for small contractors with no scheduling systems.
Provide support for large contractor companies with automated scheduling systems.
Supports communication with contractors via email communications.
Supports communication with contractors via browser communications.
Supports communication with contractors via paper communications.
Supports communication with contractors via mobile communications.

CUSTOMER INTERACTION MANAGEMENT

Requirement

Self-service online appointment scheduling, updating, cancelling and orders tracking for customers.

Fully configurable website that can be tailored to an organisation's business. Alternatively, easy embedding of the customer interaction functionality into an existing corporate website (via web API's).

Automatic, configurable template based email notifications, including appointment confirmation, reminders and real-time updates, available via any email server / service.

Customer satisfaction survey available immediately after the service execution.

Integrated 'off-the-shelf' SMS/IVR service provider module for sending SMS and IVR notification messages. Easy to use, configurable SMS/IVR message templates allowing quick adjustment to the corporate seasonal needs.

Ability to integrate with other 3rd party SMS/IVR service providers.

CUSTOMERS AND IMPLEMENTATIONS

Requirement
List the number of live customers.
List the number of scheduled resources at your largest customer.
List the number of service requests per day currently being scheduled in the largest live production environment.
Provide documented methodology for implementation including analysis, design, deployment, quality assurance and post-implementation support.
Offers business hours and 24 x 7support.
Offers global SLA-based response to support issues.
List five customers that are using your solution which have over 3,000 field resources.
Please provide financial reports for the last 3 years.

Download Editable RFP Template

After reviewing the example RFP questions below, you may like to use this template for your own organisations workforce management selection process. An editable template can be downloaded as follows where you can add your own questions or edit the example questions to suit your business requirements

