
White paper

Specification of requirements for an appointment scheduling system in the housing repairs sector to support a partnering environment

Appointment scheduling system requirements

Background

The challenge faced by today's housing repairs organisations is broadly as follows;

- Appoint all appointable work
- Keep every appointment
- Stay and deliver a first time fix, even if the repair takes longer than expected
- Still keep the next appointment
- Ensure best value – demonstrate high levels of productivity
- Ensure all business processes are designed around the customer

Common sense tells us that it is simply not possible to give an individual operative a perfect day's work that will both allow all appointments to be kept – even when some overrun and same day emergencies occur, and also ensure that the operative is kept busy all day.

An appointment system is therefore not really enough, we need a scheduling system that can help meet the dual goals. The scheduling system has two primary jobs;

Help the contact centre make 'Smart appointments'

The objective here is to achieve a schedule that is achievable, flexible and where the workforce loading is driven to the desired optimum level for each organisation. System requirements here are;

- Real-time allocation to operative's diary, not to a static view of capacity with subsequent scheduling
- Route planning and travel optimisation
- Dynamic re-scheduling as each new piece of information is received – this is the only way to ensure workforce loading is correct
- Support for flexible and overlapping appointment windows, variable by contract
- Provide visibility of operative proximity when offering appointments
- Allow remote areas to be time profiled to group appointments
- Support multiple level operative skill definition to allow contact centre allocation rules to be different to second level allocation rules
- Provide visibility of forward loading by any group (trade, area, all etc)
- Provide management information on distribution of appointment types to manage schedule flexibility

Support flexible working to ensure all appointments are kept

The second requirement is a consequence of the fact stated above that it is not possible to fully meet the modern repairs challenge if operatives are given a fixed day's work in advance.

The solution is to move to a more flexible, pool, or team working structure. Here the culture is that the organisation has a set of appointment / promises to keep each day and a team of operatives to keep them. It isn't possible to know exactly how this will be done at the start of the day, but if everyone communicates and works together, then the appointments can be kept AND everyone can be kept busy. System requirements here are;

- Support dynamic re-scheduling on status updates received from operatives
- Recognise different operatives may take different times for the same work
- Constantly route plan when re-allocating
- Always respect
 - The appointment time
 - Operative skill capabilities and usage preferences
- Allow intervention and manual override of any rule
- Allow schedule over-booking if required
- Provide central visibility of potential schedule conflict
- Provide flexible options for the central planning team to determine which jobs to re-appoint if necessary
 - Priority
 - Visit status (first visit, follow-on, previously cancelled, complaint etc)
- Provide central visibility of future appointments that can be pulled forward to help keep an operative busy
 - Skill match
 - Tenant availability indicator
 - Proximity to operative's location

Partnering related issues

In addition to the core functional requirements outlined so far, partnering introduces additional technical complexities that any solution needs to address.

Multiple contractor, common call centre

For a client working with multiple contractors, there is a need to provide consistency of service independent of the contractor undertaking the work. The client also wants service wide visibility. The call centre appointment process should be seamless and should not require the call handler to select the appropriate contractor. This will often be complex because contracts will not always follow simple property rules.

In addition, the system must provide completely separate environments for each contractor, as they will unquestionably manage their operatives differently. As well as supporting separate configurations and system access, the system must also provide separate integration capabilities for each contractor, so that the required back-office integration can be achieved.

System requirements therefore are as follows;

- Provide separate security access for each contractor allowing full access to all system areas, including configuration, operative management and reporting
- Allow individual contractors to define the basis for their own skill profiles and to define their own allocation rules.
- Allow individual contractors to control how jobs are allocated, i.e. one at a time through to whole day
- Provide a single appointment interface that automatically interrogates the appropriate contractor diaries and allows the appointment process to be completed without the call handler needing to be aware of which contractor the work should be allocated to
- Provide a standard interface API that allows contractors to integrate the scheduling system to their back-office systems without any possibility of accessing other contractor's diaries

Mobile working

This is possibly one of the most significant areas impacted by a multiple contractor environment.

To realise the full potential of dynamic scheduling, thereby allowing the service to become truly reactive to the customers' needs, some form of mobile working is absolutely essential. As well as making the service more flexible, mobile working, i.e. getting rid of all paperwork and using an electronic handheld device, can also introduce efficiencies and provide real-time information for both the contractor and client.

For a contractor, achieving this means supporting timesheets, with both productive and non productive time, and allowing materials to be managed. Each contractor will have their own material arrangements, different part list conventions, suppliers and back-office systems; some will have stores, some will utilise merchants.

Whilst it is possible for the client to provide a complete system including mobile working, this will never allow each contractor to achieve the administrative benefits of mobile working. It makes much more sense to require the contractors to provide a viable mobile working platform. Each partner can do what they like, many contracting firms have already made this investment, others have developed their own solutions, all will provide a solution at some point. From the client perspective, the requirement is simply that the central scheduling system is communicated with directly from the handhelds to allocate work and provide real-time job status updates, how much beyond that the contractor chooses to deploy is up to them.

In terms of service consistency, there is a need to ensure that some means of getting the live status updates exist for ad-hoc work not performed by core partners, or even short term while a partner implements a mobile working system.

System requirements are therefore as follows;

- Provide a standard interface API allowing each contractor to integrate their mobile working system. This interface must support real-time, two way integration from any number of different mobile working systems at the same time.
- Interaction with each partners' systems must be completely isolated so that there is no technical possibility of impacting the wrong data.
- Provide as part of the scheduling system some means of sending job information and receiving real-time status updates; this to be able to operate in conjunction with a mobile data solution and to support ad-hoc communication, using for example SMS or e-mail.

Distributed group structure

It is possible that a housing group will have one or more member associations using different housing management systems, into which they are logging their repair calls. Even if this is not the case initially, the situation can easily arise through merger activity.

To provide service consistency, the appointment scheduling system should be able to simultaneously interoperate with any and multiple housing management systems. This requirement was touched on earlier as the need for standard interfaces to as many of the housing management systems as possible, but is accentuated by the existence of a group structure.