Optimisation & planning for field engineers

Learn how BT created an automated resource management system to optimise allocation of resources, to improve the quality of service.

Summary
Innovative optimisation methods for field engineers in BT has realised savings of £20 million and improved the customer experience through delivery of an end-to-end field service optimisation suite (FOS) that has been created in-house, centralising planning and reducing manual intervention from 31% to 18%. Operational leaders need to overcome major challenges in implementing flexible resourcing for 23,000 field engineers and enabling resource planners to schedule at any location at any time while keeping costs at a minimum. Business intelligence, visibility and automation is provided to enable managers at all levels to make effective decisions that support a good customer experience in a more cost effective manner.

Key initiatives

Resource planning
BT’s large workforce serves geographically dispersed and diverse customers including businesses, ISPs and consumers. Field Optimisation Suite (FOS) gives resource managers an overview of the work they are expected to complete in a specific time frame and the resources available to complete it. FieldForecast, the forecasting component, uses historical work volume statistics to forecast demand for different products and geographical areas over different time frames. The FOS staff management tool, FieldPeople, maintains employee data. It stores the field teams’ preferred work locations, attendance patterns and skills. FieldPlan produces capacity plans based on forecasts, availability of people and business priorities. These components combine to allocate the right engineer to the right job at the right time. “It’s a one-stop shop” “We are flagging up issues well ahead of time there are no surprises anymore” “With up-to-date data we produce the best possible plan within changing resources” “It saves so much time”.

Control of Workflow
With all the data in one place, planning is much less manual and more than 80% of all work scheduled is now allocated automatically. The FOS FieldForecast acts as a central point correlating information, work volumes and priorities; with the touch of a button you can now run a FieldPlan, which balances service demand with resource supply. Because the bulk of the planning is completed in a more automated way, BT’s resource managers now have more time to focus on short notice issues and opportunities. FieldReserve allows them to change the availability of appointment slots that the call centre can offer, where engineers need to make on-site visits. For example, they can remove slots in response to a sudden increase in demand, such as adverse weather conditions, and make sure that engineers are neither under or over allocated. Slots can also be quickly adjusted to take account of sickness and other resource shortfalls. “There’s less back and forth, all the information is at your fingertips” “It’s user friendly” “Movement of people is now very simple to do”.

“We have 95 per cent of our field engineers ready to go when they log in early in the morning. FOS gives everything in one location.”
Dave George, Head of Tactical Planning

“We knew there was a void in the business that needed to be filled... engineers were travelling huge distances. We seized an opportunity which has improved operations.”
Gilbert Owusu, Head of Resource Management Technologies Research

“It allows us to measure how we are doing as a business. It’s about visibility, proactiveness and efficiency and joining systems together.”
Jamie Barker, Tactical Planner
BT sells products and services to consumers, small and medium sized enterprises, large corporates and the public sector. T23,000 field engineers – including 15,000 in Openreach and 6,000 in BT Operate – offer a professional, coordinated and efficient field force to deliver communication services across the UK and globally. FOS was developed in-house by researchers in BT’s Technology, Service and Operations team.

**Results**
- 13% reduction in manual intervention
- FOS has led to directly attributable OPEX savings of approximately £20 million to date
- Improvement in the quality of service with 8-14% improvement in the number of technicians completing jobs first thing in the morning
- c30% improved productivity for resource planners. About 95% of planning effort is now focused decision making and 5% on data gathering
- FOS sold externally to other telcos

**Better service to customers**
FOS has transformed the way BT offers appointments to its customers. The web monitor gives a real-time view of appointment books with half-hour updates. Agents can see where there are gaps. Engineers with surplus hours can then be sent within their geographical areas of preference to an area where there is a potential back log of need for their particular skill set. Reduced travel time due to better planning means more time on site with customers and more chance to complete the jobs while they are there. Because of this optimisation, the number of escalations – where engineers don’t meet their appointment at the promised time – has been reduced from 15% to 5%. Furthermore, FOS has led to a 15% improvement in cycle time; this has meant that BT can offer customers a shorter time window for visits, where access is required to business premises or homes. “It’s very seamless; you go on the system, make a booking and are confident the right engineer will turn up” “For some workstreams, we’re covering 120 appointments in one day – that is double what we did before FOS.” “Seeing lead times by area is really useful” “It’s much more reliable in meeting the needs of the customer”.

**Increased efficiency through simplicity**
FOS also reduces the complexity of resource planning for BT. It automatically analyses and processes large amounts of information and variables to optimise resource deployment. This has resulted in a closer match of supply and demand. Customer commitments are more effectively met, improving quality of service. Efficiency and productivity have increased while costs have been reduced. Since the implementation of FOS more work is being covered by less people. There was also a 20% reduction in vehicle miles travelled by BT’s engineering fleet through the optimisation of job allocation. “The actual support available is growing through better use of resources” “People get what they expect out of the system” “There’s a confidence factor, we get the answers straight away”.

“We can see what our options are of how we can react and respond to changes.”
Michelle Parry,
BT senior operations manager in BT Retail

“There’s a big focus on performance management for us now and FOS can help us perform better by helping us sell up to capacity.”
Imogen Moon,
Resource Management Unit Specialist

“We can make more bookings at shorter notice thanks to FOS.”
Neil Smith,
MFU Representative

“Before FOS it was all very manual to do resource deployment. It would take me all day to do a deployment plan for the next day. Now it takes me half an hour even taking into account absences.”
Caroline Silence,
Capacity Planner for London

“The best bit of the job really is satisfying customers. Getting an annoyed customer an appointment where before there wouldn’t have been one available without lots of manual input.”
Ian Coates,
Resource Team Leader