How Software is Optimizing the Field Service Management Industry?

Capitalizing on advances in the industry and choosing a software that matches your business needs.

DecisionBrain

DecisionBrain

Table of Contents

Introduction

Field service management has experienced positive growth in recent years and this trend is continuing into the future. The industry is expected to grow from $2.56 Billion USD in 2018 to $5.08 Billion USD by 2023, at a Compound Annual Growth Rate (CAGR) of 14.7% .

With this growth have come new challenges and operational issues. Increasing competition is putting pressure on margins generating a wave of consolidation. At the same time, customers are increasing their expectations in terms of service quality and responsiveness. To remain an FSM leader, businesses are expected to control margins and produce quality customer service on strict deadlines.

From a workforce perspective, field technicians are required to maintain a high quality of work, follow strict safety procedures, manage a daily roster of projects, and planners need to ensure productivity while managing customers' requests and unexpected events.

As the industry has grown, field service management has adopted innovative software solutions to improve the efficiency and quality of services.

Leveraging Technological Advancements

With the advancements in mobile technology, digital databases, optimization, and technician tracking options, businesses have found success implementing FSM software to address operational efficiency and quality challenges. A report done by the Aberdeen Group called ***Evolution Of The Field Service Business: Optimizing The Field Service Chain*** (July 2015)[1] reported a:

48%

service margin for best-in-class companies who leveraged new technologies to optimize their business.

1.
Coan, J. (2018). Removed - Aberdeen. [online] Aberdeen. Available at: http://www.aberdeen.com/research/10812/10812-kb-service-chain-optimization/content.aspx [Accessed 2 Nov. 2018]

Each year the list of available FSM software features becomes greater and the field of software competitors larger. This competition favors the field service industry with more affordable options and increasingly customizable features.

Most businesses already have some form of software integrated into their system but any software more than two years old can be obsolete in terms of mobility features, workforce planning, and more.

In fact, web-enabled technology for services 15 years ago could expect to be obsolete in 3 to 5 years; however, now the same software can be obsolete in 14 to 18 months[2].

With this in mind, gone are the days where companies adopted complex multi-purpose software packages that require long implementation times .

Nowadays, companies are better off selecting vendors that can offer state-of-the-art technology that can be easily intergrated on top of existing systems to improve and modernize functionalities.

2.
Gersh, L. (2013, July 29). The Velocity Of Obsolescence. Retrieved from https://www.forbes.com/sites/lewisgersh/2013/07/29/the-velocity-of-obsolescence/#5b3e04dd6596

Solutions

FSM Software Functional Elements

From an operational business management perspective, six core software functional categories can be identified[3]:

6 CORE SOFTWARE FUNCTIONAL CATEGORIES

Gartner

Though some software vendors claim to have comprehensive solutions that cover all six elements, the truth is that the core competences required to develop and maintain state-of-the-art technology in each element are very different, leaving these comprehensive solutions with significant gaps in one or more functional categories.

Operations

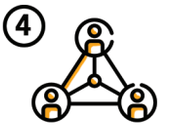
- Asset Records
- Technicians Records
- SLA Management

Analytics & Integration

- Performance Metrics
- Productivity Metrics
- ERP integration

Demand Management

- Appointment Management
- Workorder Processing
- Helpdesk



Work Planning

- Scheduling
- Demand Forecasting
- Subcontractors Management

Engineer/Technicians Enablement (Mobile)

- GPS Tracking
- Routing
- Social Collaboration

Workorder Debrief

- WO Financial Info
- Evidence
- Billing

3.
The Six Categories of Field Service Management Application Functionality and Why You Need Them. (2018, March 06). Retrieved from https://www.gartner.com/doc/3866266/categories-field-service-management-application

Nowadays, software technology has developed to a level where system integration is no longer a barrier, requiring limited effort to enable real-time integration across different platforms. In place of using a one-solution-fits-all approach, FSM companies are better off selecting a software vendor that specilaize in one of the functional categories, or a focused group of them.

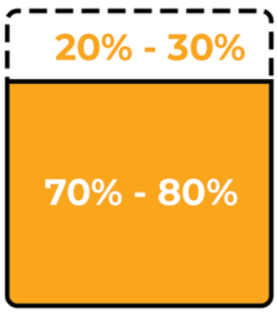
The approach of selecting specialized vendors is especially effective in the case of the *work planning* functional element, the "brain" of the overall process. This is where it is decided which technician will perform what task, when and where. **In this specific element, the use of Advanced Analytics methodologies (Machine Learning, Optimization, Artificial Intelligence, etc.) to support the dispatching decision process, is critical to unlock the full workforce productivity potential, minimizing inefficiencies (travel time, missing spare parts, poor appointment booking, etc.).**

Thanks to the advances in system integration technologies, **it is no longer necessary to plan for lengthy and costly implementation for an FSM company to leverage new analytics techniques** that significantly improve scheduling and dispatching process. Dedicated and focused applications can be relatively easily integrated on top of existing systems to equip them with intelligent decision-making technologies.

Work Planning Decision Support Tools

The use of the right automated Work Planning decision support tool can lead to **productivity improvements in the order of 20% - 30%. This means that, with the same workforce size, FSM companies can cover one quarter more demand, or that they could perform current demand with 80% of the workforce.** In an industry where margins are eroding, being able to successfully deploy these tools is fundamental for the success of any FSM company.

Workforce Planning Solution Benefits



Improve current demand by one quarter

Maintain current demand with only 80% of the previous workforce

Though many developers claim to have an automated Workforce Planning solution, **few manage to successfully incorporate sophisticated mathematical techniques maintaining the necessary ease-of-use of the application.** Those that focus on the user experience typically lack on the analytical features, often providing sub-optimal plans. Those that focus on the analytical eatures, often lag in the user experience. Only a few can provide advanced analytics with a modern intuitive interface.

Desirable Characteristics of a Workforce Planning Solution

Optimization Techniques

Advanced optimization mathematical models are at the heart of the most effective Workforce Planning solutions. The most efficient models manage to consider several constraints and internal/external variables (SLA priorities, appointments, unexpected emergencies, traffic conditions etc.), provide automated optimized plans “on the fly” and allow for planners’ manual interventions if needed. Additionally, the best solutions provide optimization layers on different time horizons:

Real-Time Dispatching:
Dynamically adjusting the plans based on real-time events is critical to ensure an adequate level of customer service.

Short-Term Operational Scheduling:
Optimally scheduling the work for the next one to five days is critical to increasing productivity.

Tactical Planning:
Planning the optimal distribution of preventive maintenance throughout the year is necessary to ensure an adequate balance of skills availability and demand.

Strategic Field Force Size and Configuration:
Defining the optimal field force size, technicians’ skillset and technicians’ geographic location all play a key role in ensuring maximized productivity, minimized travel time and higher SLA adherence.

Easy Adaptation to Diffrent Business Needs

Fully packaged products do not easily adapt to specific needs of FSM companies internal processes, procedures or policies. Redesigning processes to match the solution creates further complexity during the implementation and change management process. However, solutions that can be easily adapted to each companies specific characteristics, makes the intergration significantly simpler.

Demand and Capacity Forecasting

Leveraging Machine Learning algorithms to accurately forecast short-term demand and capacity evolution is critical to anticipate potential demand and supply mismatches that could lead to SLA breaches and customer complaints.

Decision-Focused and Intuitive UI

To manage complexity, the Work Planning interface should be clean and intuitive, designed to allow planners to focus on the most important issues, keeping all the analytics sophistication transparent to the user.

Ease of Integration

As mentioned above, integration of technologies has evolved to a point where integrating different systems shouldn’t be a barrier to deployment. Therefore, to facilitate this integration, FSM companies should ensure that the selected vendors offer solutions that can support the latest technologies.

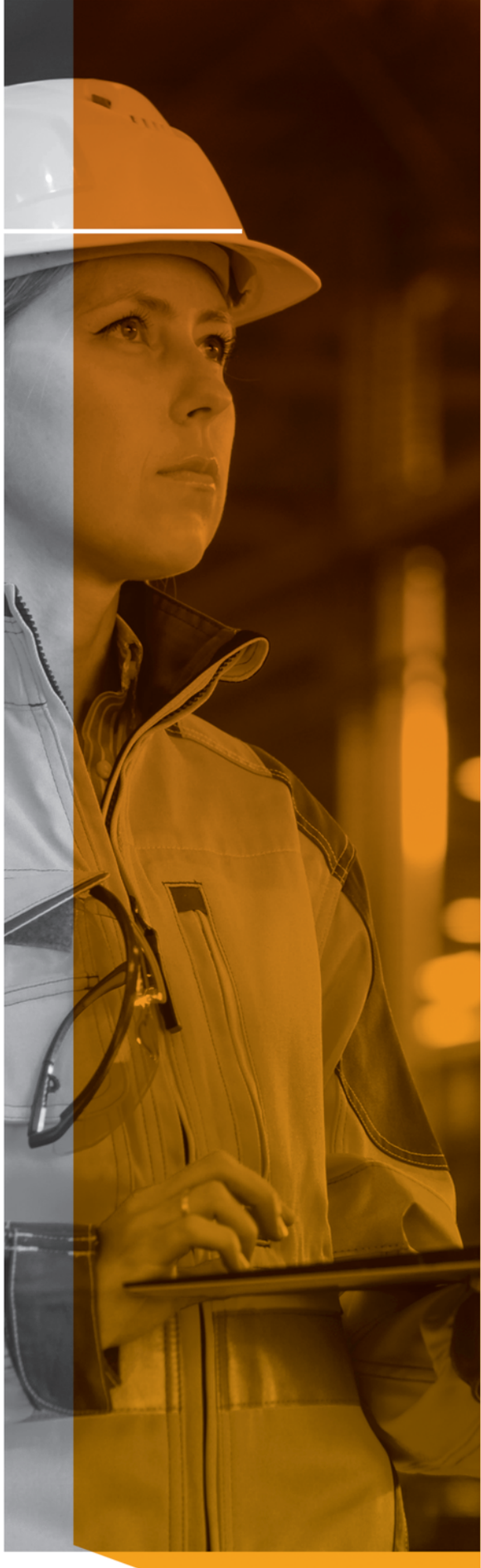
Implementation

The scope and timeline of implementation of an FSM solution will greatly depend on the current system maturity of each company:

For companies that need to deploy solutions to cover all six functional elements, **the timeline could span between 12 and 24 months before having a comprehensive FSM system in place.**

For companies that already have in place the basic functional elements (Operations, Analytics, Demand Management and Workorder Debrief), and are looking to upgrade their solutions by adding a dynamic Work Plan solution and a Mobile solution, **a timeline between 6 and 12 months should be reasonable.**

Companies that already have all functionalities and are looking to upgrade their Work Plan decision making capabilities to the latest advanced analytics technology **should probably consider between 3 and 6 months of implementation.**



Change Management

An important aspect of the successful deployment of any software solution is the change **management aspect**. This process ensures that employees, whose routine is impacted by the new software, embrace the change as positive and beneficial. This can ensure that they accept the change without focusing on its potential short-term drawbacks. **Often the difference between a successful and a poor software deployment does not lie in the software itself but in the way the change management process is handled.**

Selecting the adequate Workforce Planning solution can greatly reduce potential resistance to change coming from schedulers, recognizing the benefits that these solutions offer. The best tools in this respect are those that can easily integrate into automatically generated plans and any manual adjustment coming from the schedulers. By doing this, schedulers will have greater control over the plan.

One of the most desirable functionalities can be **letting the planner decide whether to use an automatically generated optimal solution or override it with a manual intervention.**

Another desirable feature to facilitate the planners' change journey, is **allowing the planners to focus their attention on urgent and high priority issues.**

Engineers and technicians are often prepared to receive their daily tasks in the morning, organize their routes, and debrief in the evening. When they receive a mobile device with a pre-defined daily task sequence and are required to trigger the start and end of each job, they will naturally feel as they are being controlled and will tend to respond negativley to the change. From a system perspective, adopting the right mobile solution, that focuses on an intuitive and user-friendly experience, can help ease the change journey of the engineers and technicians. Ultimately, the key factor to a successful change management, from the engineers and technicians' perspective, does not reside on the software but rather on the **adequate communication, engagement, training, coaching and incentive plans that the FSM company deploys.**

Summary

The FSM industry is experiencing steady growth, increased competition and a complex set of challenges to manage. Additionally, there is a steady erosion of business profitability and a continuous trend of industry consolidation. In this challenging context, the adoption of state-of-the-art software systems can drive significant improvements in productivity and profitability. The benefits of modern technologies are so quantifiable that their successful deployment will to separate the companies that will advance and lead the consolidation process from the companies that will fall behind.

There are several functional categories to FSM software solutions, with a few vendors claiming to offer packages that cover all of them. However, given the different competences that each functionality requires, FSM companies are better off selecting the best solutions in each functionality and investing in system integration, something that recent technological advances have greatly simplified and standardized. Of all FSM software functionalities, the one that can unlock the full potential of productivity and efficiency improvements is Workforce Planning, where modern mathematical approaches can be applied to allow real-time optimization of scheduling, minimizing travel time and idle time.

When selecting the appropriate Workforce Planning solution, FSM companies should look for vendors that offer the possibility to customize the solution based on their specific needs. Features including, advanced optimization technology, real-time capabilities, intuitive interface and easy system integration.

Credits

Bibliography

1. Coan, J. (2018). Removed - Aberdeen. [online] Aberdeen. Available at: http://www.aberdeen.com/research/10812/10812-kb-service-chain-optimization/content.aspx [Accessed 2 Nov. 2018]

2. Gersh, L. (2013, July 29). The Velocity Of Obsolescence. Retrieved from: https://www.forbes.com/sites/lewisgersh/2013/07/29/the-velocity-of-obsolescence/#5b3e04dd6596

3. The Six Categories of Field Service Management Application Functionality and Why You Need Them. (2018, March 06). Retrieved from: https://www.gartner.com/doc/3866266/categories-field-service-management-application

About DecisionBrain

We are a high-tech company that leverages Advanced Analytics techniques (Optimization, Machine Learning, Predictive Analytics, ...) to develop innovative software solutions that enable our customers to improve operational productivity, efficiency and speed.

Our company was founded in 2013 by professionals with 20+ years of experience in delivering Advanced Analytics solutions to customers worldwide. We have built a growing team of approx. 30 employees, most of them PhDs, Engineers or Mathematicians. We are also a recognized global IBM Business Partner.

Our headquarters are in Paris, we have an office in Hong Kong, and an R&D center in Montpelier, southern France. Though most of our team is in France, our customer base is global, with solutions implemented in UK, China, France, Germany, Denmark, Thailand, Malaysia, Canada and Colombia.

Contact Us

If you would like to learn more about any of our products. Please get in touch:

| www.decisionbrain.com

| contact@decisionbrain.com