# **KALCH Distribution Company (KDC) – IT Decision Paper**

## University of Maryland University College

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## Surtej Sarin

## Project Description

The proposed project is a Fleet Management Software (FMS) to improve fleet management, driver management, incident management, and tracking; KDC will purchase the SaaS solution from FleetLogixTM, a GPS fleet tracking and workforce management provider. The KDC fleet manager, operations manager, safety manager, dispatchers, and drivers will utilize the fleet system, in daily operations, and it will be maintained by IT staff. The following proposal discusses in detail the configuration, application, requirements, and benefits of the system.

## 2. Strategic Alignment

Fleet management will assist KDC – a company that depends on transportation to support its business – by improving efficiency, productivity, safety, costs, and compliance measures. Purchasing the software, as opposed to developing it, will allow the IT team to initially focus on current projects in the IT portfolio, save costs, and reduce time till fleet system operationality. The proposed project aligns with four business strategy objectives at KDC: to improve the percent of loaded miles, to track asset whereabouts to provide customers with accurate delivery dates and times, to meet FMCSA driver safety compliance requirements, and to meet SOX finance and accounting reporting requirements. It also offers driver management, including mileage tracking, multiple user logins, and route optimization, to align with the second business strategy objective to “improve the percent of loaded miles in their fleet to reduce costs by coordinating the pickup and delivery of freight at the same time in the same geographic area” (University of Maryland University College, 2016). Moreover, the third business strategy objective to “track the whereabouts of freight both in the terminals and on the trucks to provide customers with accurate delivery dates and times” is supported through fleet tracking, asset management, and a mobile dispatching application (University of Maryland University College, 2016). The Fleet Management Software project also supports KDC business efforts of meeting the Federal Motor Carrier Safety Administration (FMCSA) reporting requirement and Sarbanes Oxley (SOX) financial audit compliance requirements. To maintain driver safety and ensure payroll and timesheet accuracy, the software will utilize the FieldLogix “Goose Time Clock to help field employees improve the accuracy of their employees’ timekeeping” (FieldLogix™ Innovative GPS Fleet Tracking Plans, n.d.). The proposed project directly aligns with two IT strategies at KDC: to provide an IT system for tracking shipments in order to save costs and to ensure that all compliance requirements are met within the organization.

## 3. IT Portfolio Alignment

Referring to the timeline of the IT Portfolio roadmap from the IT Strategic Plan (ITSP), the process to implement the Fleet Management Software system will take four months, starting in quarter one and finishing in the first month of quarter two; this will be divided into obtaining, integrating, testing, and utilizing the solution. Notably, this solution falls within the operations department, and so it will continue to be maintained by the IT department staff, throughout each quarter, which will require collaborative assistance and new roles taken by the help desk staff, shift supervisors, computer security expert, and network engineers. The project will be completed two months after the Management Reporting System, which will allow managers to check financial information on a daily basis, and two months before Accurate Financials, which is currently a higher priority for the business. Additionally, this project aligns with the timeline of the Mobile Marketing Application, which will provide a new interface for clients on KDC freight options and prices compared to its competitors, and will be implemented concurrently; however, it will take priority over the Mobile Marketing Application. The project will take significantly less effort and time to implement and fleet tracking is a feature that will support many business strategies and business processes at KDC i.e. tracking vehicles and assets, creating performance reports and meeting compliance standards.

## 4. IT Architecture

IT architecture is “a set of design artefacts, that are relevant for describing an object such that it can be produced to requirements (quality) as well as maintained over the period of its useful life (change). The design artefact describes the structure of components, their inter-relationships, and the principles and guidelines governing their design and evolution over time” (IT Architecture, n.d.). The Fleet Management Software (FMS) is a new solution that serves as a tracking system for fleets in the operations department at KDC. Hence, this project will not enhance any systems at KDC; however, it will utilize pre-existing information from the fleet maintenance system and replace the route optimization and tracking system. The fleet maintenance system, which falls in the technical operations, maintenance and repairs sector at KDC, ensures fleets are maintain good performance and keeps track of the shipments in order to support higher level business functions. Moreover, it contains information on all fleets including summary of repairs, vehicle specifications, parts, and maintenance schedules. The Fleet Management Software will communicate with the fleet maintenance system, using the real-time information and endpoints which will be retrieved, similar to a database. This will support the business in many efforts related to fleet reliability, maintaining driver safety, reducing time of delivery, and ensuring appropriate product shipment on a timely basis. Moreover, the IT staff will assist in scheduling and tracking of fleet and system improvements, which will benefit both dispatch and maintenance staff. The success of fleet maintenance system is important for the success of fleet management system because any critical system failure with fleet maintenance will affect communications, fleet information, impact scheduling and delay shipments. Additionally, this system will replace the route optimization and freight tracking system, which “allows the input of freight origin and destination information” (University of Maryland University College, 2016). Dispatchers and operations managers use this system to track the location, delivery dates, and times of shipments for freights through a bill of lading. This system determines specific shipping information and dispatchers enter origin and destination manually to decide which zip code to deliver to. In doing so, they decide the best route for delivery and arrange shipment sequences. The problem with this process is it is manual, error-prone, and it can bottleneck if it is not done overnight. The major risk factor is stalling shipments and delivery operations. The new Fleet Management Software will use the FieldLogix RESTful API which allows for more flexibility with its fleet management integration. The system will use information from an electronic bill of lading but replace the old route optimization and tracking system by automating processes for drivers associated with delivery routes and shipment sequences by using the FleetLogix GPS Fleet Tracking System to track vehicles and assets (FieldLogix™ Innovative GPS Fleet Tracking Plans, n.d.). Moreover, this will allow the operations team at KDC to plot customers’ locations and dispatch routes from its internal system to its drivers’ mobile devices through FieldLogix Goose Mobile Dispatching. This will help ensure shipments are sent on time and to the correct locations.

## 5. Benefits

“Only if a company monitors the value from its IT investments will it know if that value has been attained. More important, monitoring will help a ﬁrm determine what adjustments are necessary to achieve the expected value from an investment” (Campos, 2011).

1. **Saving costs –** The Fleet Management system will help KDC increase revenue through productivity and savings in labor and fuel. “A study conducted by Motorola found that companies save an average of $5,484 per employee, per year, by utilizing GPS tracking technology” (GPS Tracking Saves Businesses Big Money, 2015). Drivers rely on this system to make their shipments, and vehicle costs are important for KDC to consider in the long term. Depending on fleet size, the return on investment could be significant: Carlos Contreras, the Owner of Sunshine Landscape, recalls “by cutting [his] labor costs by over 35%, FieldLogix paid for itself in only 1 pay period” (FieldLogix™ Innovative GPS Fleet Tracking Plans, n.d.). Also, this will save costs by ensuring shipments are sent on time and to the correct locations. On-time performance and navigation will help KDC drivers reach KDC customers without missing their routes. A fleet tracking system will help KDC “improve the percent of loaded miles in their fleet to reduce costs” (University of Maryland University College, 2016).
2. **Reducing time to deliver and providing accurate estimate and smaller delivery window estimate for customers–** The current delivery process at KDC is not optimized, inaccurate, and error-prone. The system will improve shipment routes by tracking drivers’ locations. The tracking system directly aligns with the business strategy to allow customers to accurately track the location, delivery dates, and times of shipments resulting in better customer satisfaction.
3. **Meeting compliance requirements –** The system will track divers’ working hours, and driving behaviors to ensure the work hours comply with federal and state regulations. Specifically, this applies to FMCSA compliance requirements for driver safety, and to meet SOX finance and accounting reporting requirements. The FieldLogix *Driver Management Admin App* will allow managers to monitor vehicle and driver location, activity, on-duty and off-duty status, and message drivers in real-time. This will help the safety manager ensure that KDC meets the FMCSA compliance requirements for driver safety. Moreover, the FieldLogix *Mobile Time Clock* allows managers to improve payroll accuracy and eliminate timesheet fraud.

## 6. Requirements

The primary business driver for the proposed IT project is to improve shipment tracking and driver management. Dispatchers manually track driver’s hours when scheduling pickups and deliveries; however, their results are inaccurate. The FieldLogix *Driver Management Admin App* will allow managers to monitor vehicle and driver location, activity, on-duty and off-duty status, and message drivers in real-time. This will help the safety manager ensure that KDC meets the FMCSA compliance requirements for driver safety. Moreover, the FieldLogix *Mobile Time Clock* will allow managers to improve payroll accuracy and eliminate timesheet fraud. KDC Fleet Management System will integrate the FieldLogix software to display drivers’ location on a dashboard map, for dispatching and track drivers’ current locations. Additionally, FieldLogix provides many helpful features for the fleet operations and safety manager to monitor shipping: *Historic Activity Reports* includes mileage, daily work hours, idling and speeding; *Driver Safety Analytics* includes scoring and ranking, speed limit violations, performance trends and projections, and aggressive driving monitoring; *Vehicle Vitals* measures engine light status, MPG, Battery voltage, Engine coolant & oil temp, and fuel level (FieldLogixTM Innovative GPS Fleet Tracking System Features, n.d.).

1. SaaS software is purchased – IT/system requirements
2. Fleet data is collected and integrated into the new system – IT/system requirements
3. Percent of loaded miles is improved – Business/user requirements
4. All compliance requirements are met, including FMCSA and SOX – Business/user requirements
5. Fleet management system tracks current and future location, availability, and capacity of fleets – Business/user requirements
6. Up-time or availability requirements for the system are at least 99% or two-nines – System performance requirement
7. A backup recovery, RTO, RPO, and point-in-time is setup – IT/system requirements
8. Vendor provides system support, including updates and patches – IT/system requirements
9. Fleet and operations manager and staff training on system use is complete – Business/user requirements
10. The server-side time to process a request or query to the end user is 1200 ms for 100 concurrent users – IT/system requirements

## 7. Cost Estimation

“In the assessment phase, estimators analyze the project to be estimated. Time pressure typically constrains their ability to understand the scope of the task, so a focus on ramping up the estimators’ knowledge of the business problem is essential. The general approach is to model the solution, identify the components, and then estimate their size and complexity” (Murthy, 2011).

Fleet Management Software (FMS) often vary in size and complexity, which affects cost. This project will have a moderate complexity and medium size, being a SaaS solution. The complexity entails integration of the new product to the existing products such as Fleet maintenance, involving API that needs to be written to integrate with the route optimization and tracking system into the new system. It will take two programmers in the span of four months, with a project manager. This will follow with a team of tester for acceptance testing. Also, after completion this will require end-user training with user documentation and the system should create customized reports for upper management. The aim would be to keep the cost of the project within the allocated budget without compromising timeline and quality.

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| **Assessment of Project Size and Complexity** | | | |
| **Size/Complexity** | **Small** | **Medium** | **Large** |
| **Very Complex** |  |  |  |
| **Moderately Complex** |  | **✓** |  |
| **Straightforward** |  |  |  |

## 8. Performance Measures

KDC has defined key performance indicators (KPI) that will evaluate success based on defined measures and help the company achieve goals of saving costs, tracking deliveries, and meeting compliance requirements, as shown in the following table.

|  |  |
| --- | --- |
| **Benefit to Business** | **Measure** |
| 1. Saving costs | Reduction in fuel costs by 20% |
| 1. Reducing time to deliver and providing accurate estimate and smaller delivery window estimate for customers | Efficiency in delivery in time with route optimization and informing customers when expected shipments will arrive |
| 1. Meeting compliance requirements | Automated reports to give recorded reports to accurately |

## 9. System Development

1. Plan

The IT team will interact with the end-users and finance team to understand the requirements, budget allocated, timeline, and resources. They will start assigning teams to perform tasks such as vendor evaluations, project planning, and building team.

1. Design

The IT team will involve the vendor and present the design to the operations management team. It will build and create the architecture for the system, describing the different components, interactions between components, integrations, interfaces, and interoperability with existing systems including data flow diagrams, access control, and network firewall security settings. Designing the API and hardware and software requirements.

1. Build

In the construction phase, the IT team will first build infrastructure, setting up the hardware and networking. Then it will establish the system software, including development and testing environments. Next it will install vendor software and start configuration, creating APIs and integrate this with existing systems. There will be two programmers working with a project manager.

1. Test

This will involve a system test plan, with use cases and test cases. A tester from the IT team will create test data and load it in the system, writing and Executing the test scripts. The team will then analyze the test results and compare the actual results against the expected results. For any errors, problem tickets or software defects will be created and sent back to the development teams. This step involves close collaboration with testers, developers, end-users, who work on user-acceptance testing, and security teams.

1. Launch

The launch phase includes a deployment plan, which covers the project timeline, communication plan, often with a telephone bridge, and defined milestones. It will have a final estimation and a go/no-go. The functional-area leads, upper management, project managers, end-users, developers, testers, and security team are present during this phase.

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