E-tools event – OSH phone apps

Safety features of the I_Site app for managing material handling fleets

9th of June 2015
Introducing Toyota Material Handling Europe
Introducing Toyota Material Handling Europe

Europe at a glance

- **67,700** units sold in FY14
- **300,000** trucks on service agreement
- **3.5 million** customer service assignments per year
Introducing Toyota Material Handling Europe

What/Where we produce

Mjölby
Sweden

Ancenis
France

Bologna
Italy
Introducing Toyota Material Handling Europe

Our mission:
Customer first

Bringing exceptional efficiency to material handling operations
In TMHE’s sustainability strategy, Safety is 1 of 3 key focus areas:

**MINIMISE**
environmental impact

**OPTIMISE**
business processes

**MAXIMISE**
safety, quality & performance
Material Handling Industry Safety Statistics
A sizeable challenge

EUROSTAT accidents statistics

1% of accidents in EU factories was caused by mobile handling equipment

These 1% resulted in 10% of all physical injuries

14% of workers who died as a result of a contact with mobile handling devices were less than 25 years old

Source: European Commission research paper from 2008 into "causes and circumstances of accidents at work" across EU-27 countries in the period 2001-2005
A sizeable challenge

US OSHA accident statistics

~ 85 forklift fatalities per year

~ 34,900 serious injuries

~ 61,800 non-serious injuries

Source: US Occupational Safety & Health Agency (OSHA)
Material Handling Industry Safety Statistics

More detail at national level

Dutch accident statistics

Top root causes identified by Dutch research:

1. Poor visibility and audibility
2. Lack of separation of pedestrians and trucks
3. No adjustment of speed of the truck to the situation
4. No safe guards to prevent accidental movement of a stationary forklift
5. Inadequate driver training
6. Lack of a safety culture

Source: [www.evo.nl](http://www.evo.nl) (EVO)

Primary types of accidents identified by Dutch research:

- 43%: Pedestrians hit by forklift
- 29%: Accidents involving forklift driver
- 9%: Entrapment between or against and object and the truck
- 7%: Fall from height moving work platform on the forks of the truck
- 6%: Person hit by object falling from forklift truck
- 6%: Others
Our Safety Strategy
Our Safety Strategy

MAXIMISE safety for customers using our equipment

Leadership: EU OSHA Campaign Partnership

Plant & Equipment: Improving safety of our trucks at the design stage

Systems & Procedures: I_Site: our fleet management solution

People’s Behaviours: Training: Drivers, Pedestrians, Managers

Lost Time accidents

1 2 3 4 5

time
# Understanding safety statistics drives our innovation

<table>
<thead>
<tr>
<th>Forklift accidents’ statistics</th>
<th>Pedestrian hit by forklift</th>
<th>Accident involving forklift driver</th>
<th>Entrapment</th>
<th>Fall from Height</th>
<th>Person hit by object falling from truck</th>
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<td>Forklift accidents’ statistics</td>
<td>43%</td>
<td>29%</td>
<td>9%</td>
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<td>SAS (System for Active Stability)</td>
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The I_Site app

Helps our customers to
- minimise environmental impact
- optimise business processes
- maximise safety, quality & performance
The I_Site app

Our Fleet Management solution
To optimise customer operations

- Telematics unit
- Additional sensors
- Back office system (ERP)
- Field engineers’ service assignments

- I_Site web
- I_Site app

Coaching
Measuring Shocks/Collisions
To improve safety

Shock Sensor
The I_Site app

Monitoring Battery Charging Behaviour
To extend product lifetime

18
An awarded Fleet Management solution

Most recent achievements

- **2013** Computer Weekly’s Enterprise Software Award
- **2013** BCS & Computing UK IT Industry Awards
- **2014** IFOY award for intralogistics solution of the year in the forklift truck industry
The I_Site app

I_Site helps our customers improve in 4 key areas

- **COST CONTROL**
  - Reducing cost of damage (change driver behavior)
  - Improving fleet productivity
  - Remote access to hour meters
  - Extending battery lifetime

- **PRODUCTIVITY**
  - Understanding bottlenecks and optimizing fleet size
  - Improving drivers’ behavior
  - Comparing utilization ratios across sites
  - Minimizing idle time

- **HEALTH & SAFETY**
  - Collision/Shock reporting
  - Controlling driver access
  - Control driver licences
  - Pre-operational check
  - Instant notifications (App)
  - Immobilizing unsafe trucks

- **ENVIRONMENT**
  - Optimization of truck & battery usage & lifetime
  - Reduction of idle time on diesel and LPG forklifts
  - Reducing unnecessary visits to sites
For Fleet Managers

“On the move”

• Keeping you in control – wherever you are …

• Providing the most vital information from the I_Site web portal:
  – High Shocks / Failed Pre-Op Checks / Driver & Fleet activities / Notifications

• Incident details are transmitted instantly to your mobile device
Main features of the app

High Shock Notification
The I_Site app

Main features of the app

Shock Lockout Reset
Main features of the app:

Failed Pre-op Check Notification

- Pre-use inspection by drivers to
  - Ensure the truck is safe to use
  - Comply with safety regulations
- All drivers must check the condition of the truck before starting to work
- Results are instantly available in the web and in the app
- Failed Pre-Op Check alert in the app
Main features of the app

Truck Activity Information
The I_Site app

Main features of the app

Driver Permissions
Development

Hours & Cost

- Development time
  - Customer research / Design 100 hrs
  - Technology benchmark 50 hrs
  - Development & Test 350 hrs
  - Release management 40 hrs

- 2-3 internal system development resources

- No external development costs
The I_Site app

Development

Strategy

- Identification of customer requirements
  - Years of I_Site experience in customer operations
  - Kaizen philosophy / Partnership with I_Site customers
  - Customer interviews specifically on the app design
- 1st step: IOS development
- ‘Approval’ from critical customers
- 2nd step: Android development
The I_Site app

Dissemination

Strategy

- Highlighted as key feature of I_Site in all communication
- Playing a leading role at marketing events
- 1st fleet management app in our industry
- Early-adopters and brand ambassadors
- USP in closing major truck deals

- 1st step: European roll-out - IOS
- 2nd step: Global roll-out - IOS
- 3rd step: Global roll-out - Android
Target Audience

- All existing I_Site customers targeted directly
- Safety-oriented customers
  - Safety Managers
  - Fleet Managers
  - Logistics Managers
- TMH Sales & Marketing
- Professional associations & institutes
To conclude

Lessons learnt

+ Evaluating the customer needs first
+ Agile & cost-efficient development by utilising internal resources
+ Beneficial to chose same technology as the I_Site platform

− Time-consuming tests & validation, due to
  − Multiple OS and devices
  − Worldwide customers (languages)
− Difficult to cover old devices
To conclude

Support from other OSH actors

- Research partnership with FIOH on effectiveness in reducing accident and injury rates being explored
- We need an update of the European Commission research paper from 2008 into “causes and circumstances of accidents at work” across 27 European countries in the period 2001-2005 as it is hard to build a business case on data >10 years old