



## Learn How Komplett Utilizes SAP TM 9.3 to Optimize its Distribution Network in the B2C E-Commerce Industry Within 90 Days



Presenter:  
Tom Rune Bjørnstad  
Komplett Group

# What We'll Cover

- **Company Overview**
- Buying Groceries Online
- Project Introduction
- Highlights for SAP TM
- Driver APP Using SAP Fiori Technology
- Tracking & Tracing with SAP EM
- Highlights for SAP EWM
- WEB-Order Life Cycle in the Supply Chain
- Wrap Up & Questions

# What We'll Cover

- **Company Overview**
- Buying Groceries Online
- Project Introduction
- Highlights for SAP TM
- Driver APP Using SAP Fiori Technology
- Tracking & Tracing with SAP EM
- Highlights for SAP EWM
- WEB-Order Life Cycle in the Supply Chain
- Wrap Up & Questions

# Company Overview

- 1991  NOREK
- 1996  KOMPLETT.no
- 2000  KOMPLETT.se
- 2006  KOMPLETT.dk
- 2007  MPX  
 itegra
- 2011  Blush.no  
 Bildeler.no
- 2013  WEBHALLEN.no  
 KOMPLETT.forsikring.no
- 2014  KOMPLETT.bank.no  
 BABYBARDET.no
- 2015  KOMPLETT.reiser.no  
 KOMPLETT.apotek.no  
**comtech**
- 2016 **marked.no**

## The Nordic countries' largest e-commerce player

The Komplet Group is one of the Nordic countries' largest e-commerce player. Its corporate headquarters are in Sandefjord, Norway. Running SAP since 2003.

## The only link between manufacturers and customers

The Komplet Group strives to be the only link between manufacturers and customers. This results in an efficient operating model, allowing the Komplet Group to operate profitably and offer competitive prices. The Komplet Group's webshops sell to end-users, businesses, public enterprises and resellers.

<b>7,3</b> billion	<b>16</b> webshops	
<b>1 800 000</b> customers	<b>800</b> employees	
<b>20 years</b> of experience	<b>Preferred</b> by customers	

# Company Overview



We operate in a wide spectrum  
of markets

Our vision is to be "the obvious  
choice"

ELECTRONICS



HOME & LEISURE



BEAUTY & WELLNESS



PHARMACY



MOTHER & BABY



AUTO PARTS



TRAVEL



INSURANCE



# Company Overview

- **94 Million Visitors in 2015**
- **Google analytics is used to track all activity**
- **New sales order created every 1.9 second by IDoc**
- **Average pick lines of 2.6**



# What We'll Cover

- **Company Overview**
- **Buying Groceries Online**
- Project Introduction
- Highlights for SAP TM
- Driver APP Using SAP Fiori Technology
- Tracking & Tracing with SAP EM
- Highlights for SAP EWM
- WEB-Order Life Cycle in the Supply Chain
- Wrap Up & Questions

# Marked.no – Buying groceries online



- Online groceries shopping is no longer an interesting experiment, it is here to stay!
- Norwegian online grocery shopping has huge potential

The screenshot shows the marked.no website interface. At the top, there is a navigation bar with the logo, navigation links (Bedriftsunder, Informasjon, Logg inn), a search bar, and icons for delivery and shopping cart. Below the navigation bar is a large banner for a "Velkomstilbud" (Welcome offer) featuring grill products. Underneath are two smaller promotional images for "Middagsmenyer Uke 22" and "Hjemmelagde middager". A search bar with the placeholder "Skriv inn din adresse og sjekk om vi kan levere til deg" is positioned below the images. The main content area displays a grid of grocery products, each with an image, a price tag, and a shopping cart icon. The products include Grandiosa Pizza, Q Lettmelk 11, Røde Steinfrie Druer, Laksefilet, Stratos Storplate, Polly Peanøttsmør, Dipe uten kulayre, Perleotsmør, Kylling Lårfilet, Junior Frukt Smoothie, Mens Dag Booken, and Coca-Cola 1.5l.

Product	Price
Grandiosa Pizza Original 575 g	41 <sup>00</sup>
Q Lettmelk 11 1 l / 18,7 pr liter	15 <sup>00</sup>
Røde Steinfrie Druer kurv 500 g / 33,8 pr kilo	26 <sup>00</sup>
Laksefilet ca. 400 g, Maridets Utvalgte 400 g / 195,8 pr kilo	79 <sup>00</sup>
Stratos Storplate 150 g Nidar 150 g / 192,7 pr kilo	28 <sup>00</sup>
Polly Peanøttsmør 340 g 340 g / 105,9 pr kilo	36 <sup>00</sup>
Dipe uten kulayre QS1 0,5 l / 14,4 pr liter	7 <sup>00</sup>
Perleotsmør Røde 200 g / 154 pr kilo	30 <sup>00</sup>
Kylling Lårfilet 450 g, Prior 450 g / 122 pr kilo	54 <sup>00</sup>
Junior Frukt Smoothie 110 g, Nestlé 110 g / 157,3 pr kilo	17 <sup>00</sup>
Mens Dag Booken 4 lig for voksne hunder 4 000 g / 44,8 pr kilo	185 <sup>00</sup>
Coca-Cola 1.5l 1,5 l / 179 pr liter	26 <sup>00</sup>

Vis alle varer



# Marked.no – Buying groceries online



- High quality fruit, vegetables and fresh food like fish
- Readymade food from your own kitchen
- Recipes



- Frukt og bær
- Kjøtt og kylling
- Flak og smør
- Middag
- **Hjemmelagde middager**
- Middagstilbehør
- Meieri og egg
- Bakeri og frokostblandning
- Pålegg og ost
- Snacks og godteri
- Dessert, is, kjeiks og kake
- Drikke
- Alkoholholdig drikke
- Barn
- Hygiene og helse

## Hjemmelagde middager

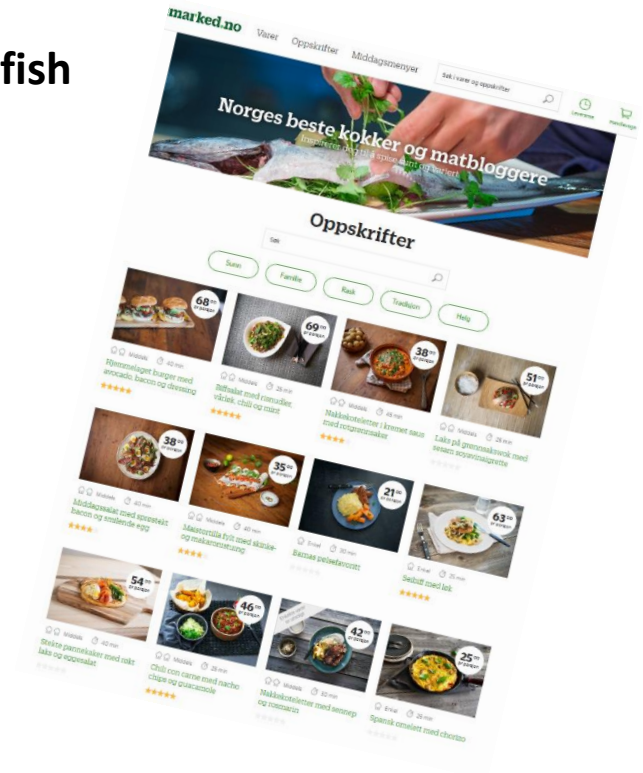
Hver dag lager vi disse rettene hjemme i Østre Åker vei. Kjøkene våre står opp trydlig slik at du skal få fersk middag levert rett hjem. Med på laget har vi kjente kokker som er lidenskapelig opptatt av smak, kvalitet og sunnhet. Vi bruker rene råvarer og det beste sesongen har å by på.



Markeds Hjemmelaget Lys Lapskaus  
950 g / 104,2 pr kilo



Markeds Hjemmelaget Thai Green Curry med kylling  
960 g / 103,1 pr kilo



# Marked.no – Buying groceries online



- Easy to use web
- Responsive design
- 4-step check out process

1 Handlevogn 2 Leveranse 3 Betaling 4 Ordrebekræftelse

## Takk for bestillingen

Du vil nå motta en e-post som bekræftelse på bestillingen.  
Ordrenummer: 1002039931  
Ordredato: 22. juni 2016

<b>Pris varer</b>	<b>567,30</b>
Herav mva	74,14
Herav pant	5,00
Pose, 4 stk	1,00 pr stk 4,00
Levering	69,00
<b>Totalpris</b>	<b>640,30</b>
Leveres til	Kathrineborg gt.19, 3213 Sandefjord fredag 24 jun kl 16.00 - 18.00

Skriv ut Gå til forsiden

Gå til Min side

Til toppen

# What We'll Cover

- **Company Overview**
- **Buying Groceries Online**
- **Project Introduction**
- Highlights for SAP TM
- Driver APP Using SAP Fiori Technology
- Tracking & Tracing with SAP EM
- Highlights for SAP EWM
- WEB-Order Life Cycle in the Supply Chain
- Wrap Up & Questions

# Marked.no – Project Introduction



- **New e-Commerce platform [www.marked.no](http://www.marked.no)**
- **Integration to Komplett Group SCE platform**
- **SAP TM and SAP EM selected as transport management system**
  - Komplett Group approved for SAP TM 9.3 ramp-up
  - SAP HANA platform selected
  - Standard SAP EWM setup for warehouse
- **3 month ambitious implementation plan**
  - Westernacher and internal Komplett resource for SAP TM –SAP EM setup
  - Komplett internal resources for SAP EWM setup
  - Pearl Consulting and internal Komplett resources for SAP ERP and SAP PI setup
  - 90 day implementation marathon
  - Delivered on time!



# What We'll Cover

- **Company Overview**
- **Buying Groceries Online**
- **Project Introduction**
- **Highlights for SAP TM**
- Driver APP Using SAP Fiori Technology
- Tracking & Tracing with SAP EM
- Highlights for SAP EWM
- WEB-Order Life Cycle in the Supply Chain
- Wrap Up & Questions

# Highlights for SAP TM



## • Online interaction with WEB store

- Delivery Time Slots
- Delivery Zones
- Pick Up Locations
- Capacity utilization data for Time Slots and Pick-up Locations
- Dynamic price changing based on utilization of time slots

## • Resources

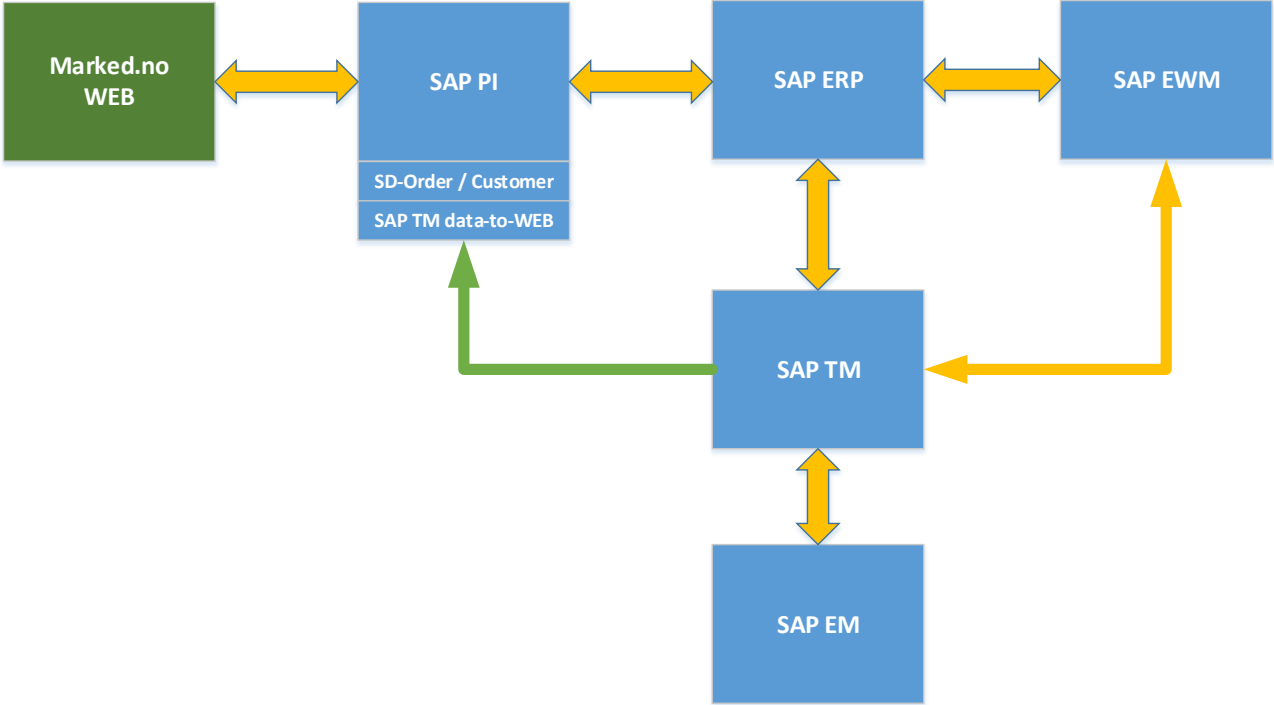
- Vehicle Resources – Different capacity dimensions such as boxes&bags
- Calendar Resources – Opening and closing times for Pick Up locations

## • Advanced Planning

- Break patterns for trucks
- Detailed unloading durations
- High volume optimization



# Interaction between systems



# Integration Methodology Order-Based Planning & Execution



## **Sales Order Processing (SAP ERP)**

- Order Related Transport Request distributed SAP TM



## **Transportation Planning (SAP TM)**

- TM triggers creation of delivery in SAP ERP
- Delivery distributed from SAP ERP to SAP EWM
- SAP TM triggers Load Appointment, creation Transport Unit to SAP EWM (i.e., Load Sequence, Leave Yard Time)



- **Automatic Wave Creation for Tus (SAP EWM)**
- **Picking, packing, staging & loading (SAP EWM)**
- **Goods issue (SAP EWM)**
  - Delivery update in SAP ERP with actual result
  - Update delivery-based transportation request & freight order (SAP TM)



## SAP TM Means-of-Transport “Home Delivery”

- Goods are directly shipped to different customers from the warehouse respecting the delivery appointment times which are part of Marked delivery zone
- New customers will after user account creation most likely fulfill a sales order minutes later
  - Distribution of Corporate Master(CIF-model) data to SAP TM and SAP EWM is important



## SAP TM Means-of-Transport “Pick-Up Locations”

- Goods are delivered to customer pick up points for the customers to pick up or if they are not part of Marked delivery zone
- Enhancement in order interface consider different partner function usage
  - Sold-to party = Customer
  - Pick-up location = Consignee



# Highlights for SAP TM

- **Automatic background optimization considering below parameters**
  - Planning based on dimensions such as boxes and bags
  - Separate planning runs for considering morning and afternoon delivery times
  - Considering exact distance and duration
  - Mass delivery proposal to SAP ERP from SAP TM
- **Automatic Transport Unit creation (Integration with SAP EWM)**
- **Leave yard time, Load Sequence**
- **Vehicle Resource info and Means of Transport**



# Highlights for SAP TM



- **GIS-data and Map integration is provided by Here to:**

- Utility for Distance & Duration calculation
- Provide accurate location data
- Visualization of Map

The screenshot displays the SAP TM interface, split into two main sections: 'Document Flow' and 'Map'.

**Document Flow Table:**

Document Hierarchy	Business Document Ty...	Business Docum...	Business Document L
HD FO 6100001898	HD FO	6100001898	In Process
Predecessor Business Documents			
Marked FU 4100015973	Marked FU	4100015973	In Process
DTR 3200013766 (Outbound Delivery 816001002)	DTR	3200013766	In Execution
Marked Home Delivery OTR 1100013784 (Sales Order 1002039...)	Marked Home Delivery ...	1100013784	Completed
Sales Order 1002039657	Sales Order	1002039657	
Outbound Delivery 816001002	Outbound Delivery	816001002	
Marked FU 4100015976	Marked FU	4100015976	In Process
DTR 3200013759 (Outbound Delivery 816001004)	DTR	3200013759	In Execution
Marked Home Delivery OTR 1100013786 (Sales Order 1002039...)	Marked Home Delivery ...	1100013786	Completed
Sales Order 1002039676	Sales Order	1002039676	
Outbound Delivery 816001004	Outbound Delivery	816001004	
Marked FU 4100015982	Marked FU	4100015982	In Process
DTR 3200013768 (Outbound Delivery 816001007)	DTR	3200013768	In Execution
Marked Home Delivery OTR 1100013802 (Sales Order 1002039...)	Marked Home Delivery ...	1100013802	Completed
Sales Order 1002039668	Sales Order	1002039668	
Outbound Delivery 816001007	Outbound Delivery	816001007	
Marked FU 4100015946	Marked FU	4100015946	In Process

**Map Section:**

The map on the right shows a geographical area with several blue circular markers representing locations. These markers are interconnected by a network of blue lines, illustrating the delivery routes and the integration of GIS data with the document flow.



# What We'll Cover

- **Company Overview**
- **Buying Groceries Online**
- **Project Introduction**
- **Highlights for SAP TM**
- **Driver APP Using SAP Fiori Technology**
- Tracking & Tracing with SAP EM
- Highlights for SAP EWM
- WEB-Order Life Cycle in the Supply Chain
- Wrap Up & Questions

# Driver APP Using SAP Fiori Technology



- **App for our drivers and employees at pick-up location**
  - Guide driver/employee throughout the tour and also provide real time tracking information for dispatcher and customer service.
  - Keep control on every single event, planned/unplanned that might happen during delivery
  - Pre-trip and Post-trip scenario for truck or Pick up location

# Driver APP Using SAP Fiori Technology



Delivery v.048

Henrik test  
Order: 100222580  
Sandakerveien 74A  
Restriction: 18+  
0484 Oslo  
Slot: 09:00 - 11:00

- ✓ Navigate To Customer
- ✓ Unloading
- ✓ Delivery
- ✓ Next Customer

Navigation

Stine Halvorsen  
Order: 1002021905  
Bjerkoddsveien 28  
Restriction: 18+  
1341 Slependen  
Slot: 16:00 - 17:00

Launch Navigation **Arrived at customer**

Unload order

Ragnar Gjeldstad

Total	Sequence	To Do
111111110080242260	1	<input type="radio"/>
111111110080242261	1	<input type="radio"/>
111111110080242262	1	<input type="radio"/>
111111110080242263	1	<input type="radio"/>

All To Do Done

Manifest

Route summary:  
Number of deliveries: 7  
Total weight: 27.670 KG

<b>Order: 100222580</b>	Proof of delivery
Henrik test	Restriction: 18+ Acl
Sandakerveien 74A	Slot: 09:00 - 11:00
0484 Oslo	Weight: 3.41 KG
	Seq: 1
<b>Order: 100222577</b>	Proof of delivery
Rautus Rautus	Restriction: 18+ Acl
Lillokata 1	Slot: 09:00 - 11:00
0484 Oslo	Weight: 4.60 KG
	Seq: 2
<b>Order: 100222578</b>	Waiting for delivery
John O'shea	Restriction: 18+ Acl
Storgata 20	Slot: 09:00 - 11:00
0182 Oslo	Weight: 3.10 KG

All To Do Alc Done



# What We'll Cover

- **Company Overview**
- **Buying Groceries Online**
- **Project Introduction**
- **Highlights for SAP TM**
- **Driver APP Using SAP Fiori Technology**
- **Tracking & Tracing with SAP EM**
- Highlights for SAP EWM
- WEB-Order Life Cycle in the Supply Chain
- Wrap Up & Questions

# Tracking & Tracing with SAP EM

## SAP TM – SAP EM integration to report following activities

- Track and trace of delivery appointment
  - Capturing proof of delivery exception handling situations
  - Capturing reasons for “No delivery”
- “Heads-up” notification sending SMS approximately 15 minutes before delivery appointment
- Social control for age verification when delivery contains alcohol or tobacco
- Milestones reported via Mobile App

# What We'll Cover

- **Company Overview**
- **Buying Groceries Online**
- **Project Introduction**
- **Highlights for SAP TM**
- **Driver APP Using SAP Fiori Technology**
- **Tracking & Tracing with SAP EM**
- **Highlights for SAP EWM**
- **WEB-Order Life Cycle in the Supply Chain**
- **Wrap Up & Questions**

# Highlights SAP EWM

- **Trolleys used as resources**
  - 12 Crates per Trolley
  - 3 bags per crate
- **Warehouse order grouped by crates and bags**
  - 1 Trolley = 1 Warehouse order
- **Optimized pick path**



# Highlights SAP EWM – Picking at Warehouse



- RF picking used in the first months of operation
- RF Framework
  - Catch weight used
    - ✓ Scanning of GTIN-13 variable weight EAN codes
  - Deviation handling
    - ✓ Different exception codes
    - ✓ Physical inventory
    - ✓ Deviation queues



# Highlights SAP EWM – Picking at Warehouse



- **Pick-by-Voice project going from RF completed**

- Pickers in warehouse has increased efficiency between 28-40% going from RF to Pick-by-Voice
- Bin-labels with both color and directional(left mid right) verification codes



# Highlights SAP EWM – Storage Use and Labels KOMPLETT®GROUP

- Pallets
- Throughput
- Racks
- Dynamic and fixed bins









# Highlights SAP EWM – Transportation Labels and Loading Sequence



- Unique loading sequence per customer
- Notice of age verification/social control
- Leave yard time
- Staging bin
- Vehicle/license plate

Til: Ragnhild Skreden, Betzy Kjelsbergs vei 15 0486 Oslo Telefon: 90634273		<b>marked.no</b> <i>(ved last/løst)</i> <b>18+</b>	
Poser Grønn/Frukt: <b>3/2</b>		Timeslot: 15:00 - 16:00 Leave yard time: 03.03.2016 13:29:31	
Poser Blå: <b>1</b>	Staging Bin: <b>STAGING-22</b>		
Sekvens: 2 Tote: 02			
Leveringsnummer: 0815657985 Kundennummer: 0071003101 Kontaktperson: Ragnhild Skreden Binnummer: DP83063			
 0011111110080 226730			

Til: Karl Alvaer Kirkeveien 175 0455 Oslo Telefon: 92616097		<b>marked.no</b> <i>(ved last/løst)</i> <b>18+</b>	
Poser Grønn/Frukt: <b>2/1</b>		Timeslot: 18:00 - 19:00 Leave yard time: 03.03.2016 13:29:31	
Poser Blå: <b>1</b>	Staging Bin: <b>STAGING-22</b>		
Sekvens: 8 Tote: 01			
Leveringsnummer: 0815657986 Kundennummer: 0071003089 Kontaktperson: Karl Alvaer Binnummer: DP83063			
 0011111110080 226729			

Til: Robin Pedersen Sorgenfrigata, 29a 0365 Oslo Telefon: 47084822		<b>marked.no</b> <i>(ved last/løst)</i> <b>18+</b>	
Poser Grønn/Frukt: <b>1/1</b>		Timeslot: 18:00 - 19:00 Leave yard time: 03.03.2016 13:29:31	
Poser Blå: <b>1</b>	Staging Bin: <b>STAGING-22</b>		
Sekvens: 6 Tote: 03			
Leveringsnummer: 0815657979 Kundennummer: 0071003089 Kontaktperson: Robin Pedersen Binnummer: DP83063			
 0011111110080 226731			

# Highlights SAP EWM – Miscellaneous



- **Fresh on demand products**
  - Fish, Meat, Sushi, bread, own produced meals
    - ✓ Automatic created POs by night based on demand with automatic goods receipt to fixed bins
    - ✓ Automatic replenishment/posting change from frozen goods to thaw goods with worklist. Ex. half baked bread
- **Everything done automatically based on different business rules**
- **Advanced shipping notification (ASN) implemented**
- **Automatic creation of packaging specification and warehouse products based on business rules**

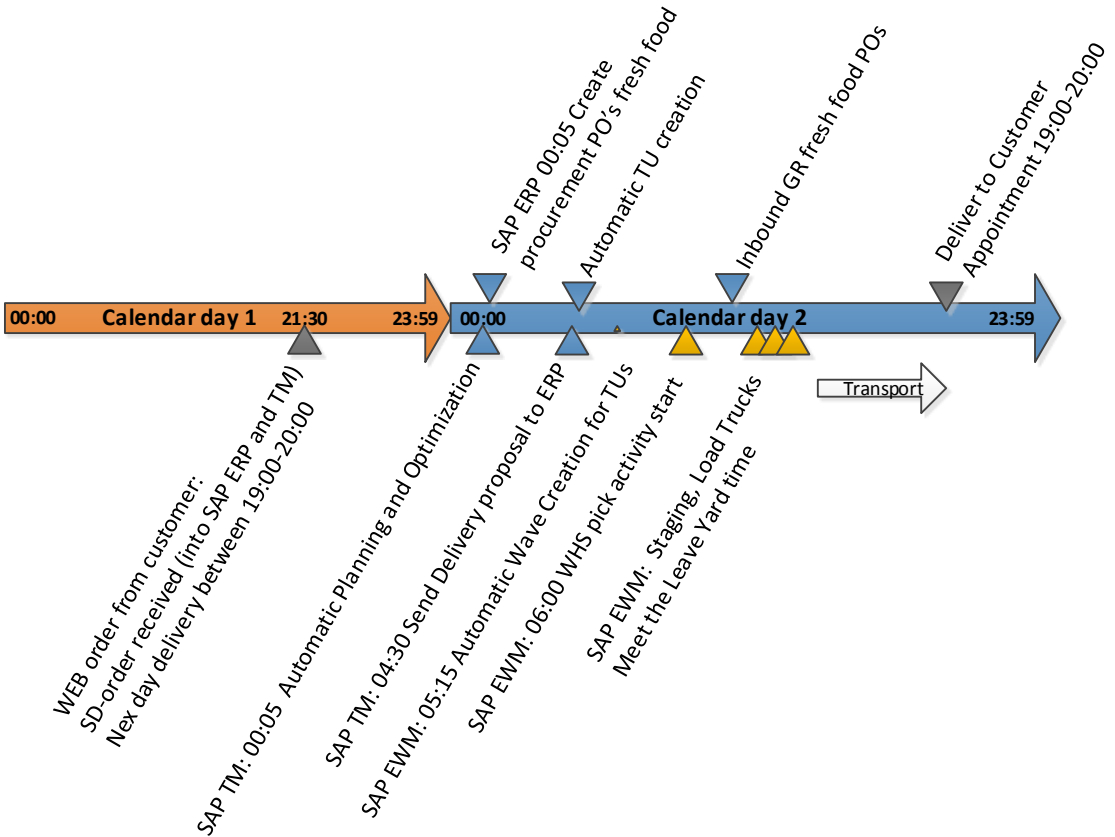
# What We'll Cover

- **Company Overview**
- **Buying Groceries Online**
- **Project Introduction**
- **Highlights for SAP TM**
- **Driver APP Using SAP Fiori Technology**
- **Tracking & Tracing with SAP EM**
- **Highlights for SAP EWM**
- **WEB-Order Life Cycle in the Supply Chain**
- **Wrap Up & Questions**

# What We'll Cover

- **Company Overview**
- **Buying Groceries Online**
- **Project Introduction**
- **Highlights for SAP TM**
- **Driver APP Using SAP Fiori Technology**
- **Tracking & Tracing with SAP EM**
- **Highlights for SAP EWM**
- **WEB-Order Life Cycle in the Supply Chain**
- **Wrap Up & Questions**

# WEB-Order Life Cycle in the Supply Chain



# Wrap Up & Questions



**You have now seen:**

- **SAP Supply Chain Execution platform fully used in a e-commerce environment**
- **Transportation management and Track & trace in orchestration with e-commerce platform and driver APP**

**Thank you for listening!**



Tom Rune Bjørnstad  
SAP Inhouse Developer  
Mobile: +47 984 52 981  
[TomRune.Bjornstad@komplett.com](mailto:TomRune.Bjornstad@komplett.com)  
<http://www.komplettgroup.com>

Østre Kullerød 4  
3241 Sandefjord, Norway  
Phone +47 33 00 50 00  
Fax: +47 33 00 50 01