Build your own App in the Cloud – SAP Fiori UX Design and Build Challenge
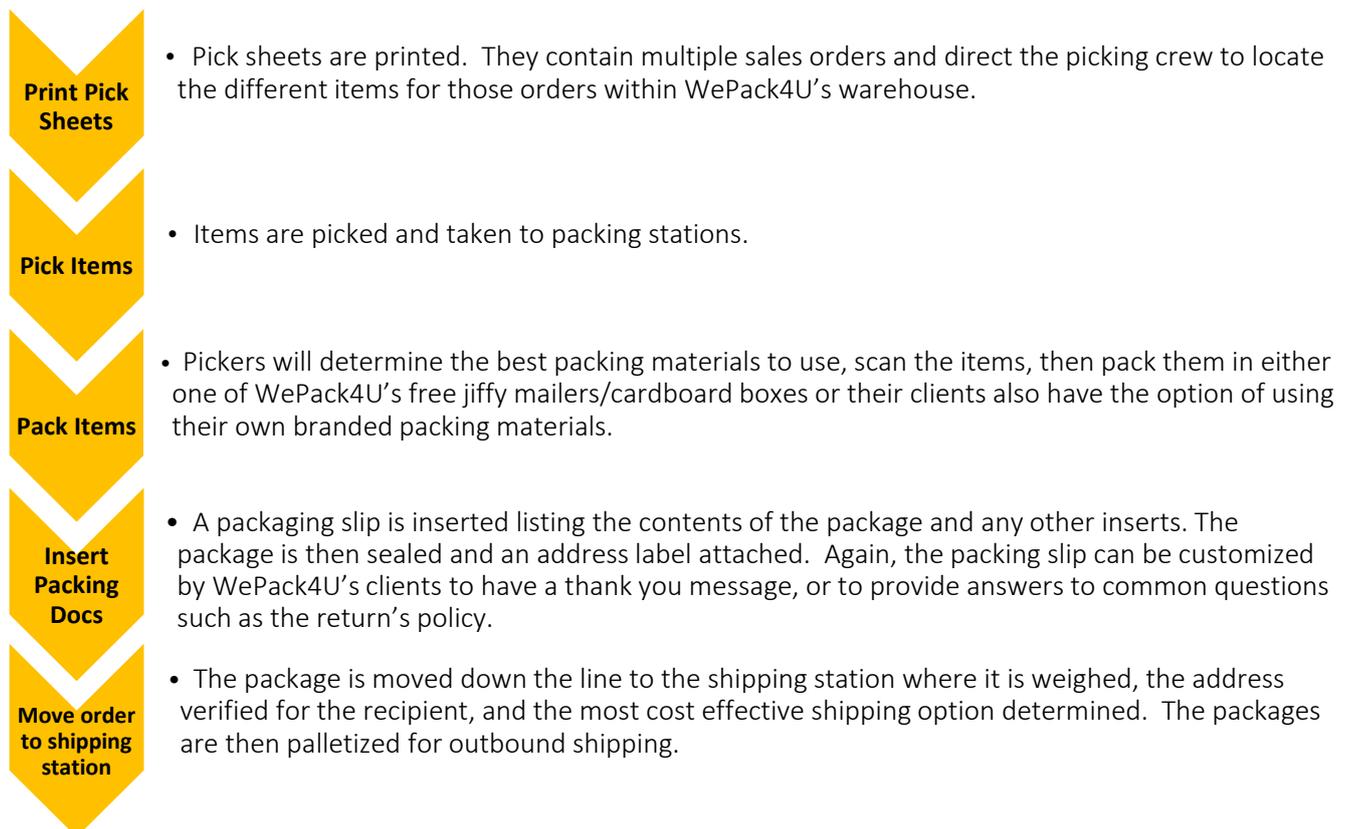
Submitted by: Alison R. Hayman

The Story

WePack4U is a family owned business providing end-to-end internet fulfilment services for online retailer clients of all sizes. Due to the increasing competitiveness in the fulfilment outsourcing industry, WePack4U is looking at SAP technology to gain a competitive advantage to achieve superior service level guarantees and a more tailored and seamless experience for each client, resulting in greater operational efficiency, growth of their market share, and increased revenue.

Order fulfilment, in general, refers to the steps involved in receiving, processing and delivering an order to end customers. Amongst the main services WePack4U provide to their clients are Inventory Storage, Fulfilment Services, Product Shipping and Order Returns Processing. It is the Fulfilment Services step in particular that has been identified as a key area that would benefit from streamlining by leveraging SAP's new mobile capabilities using Fiori Apps.
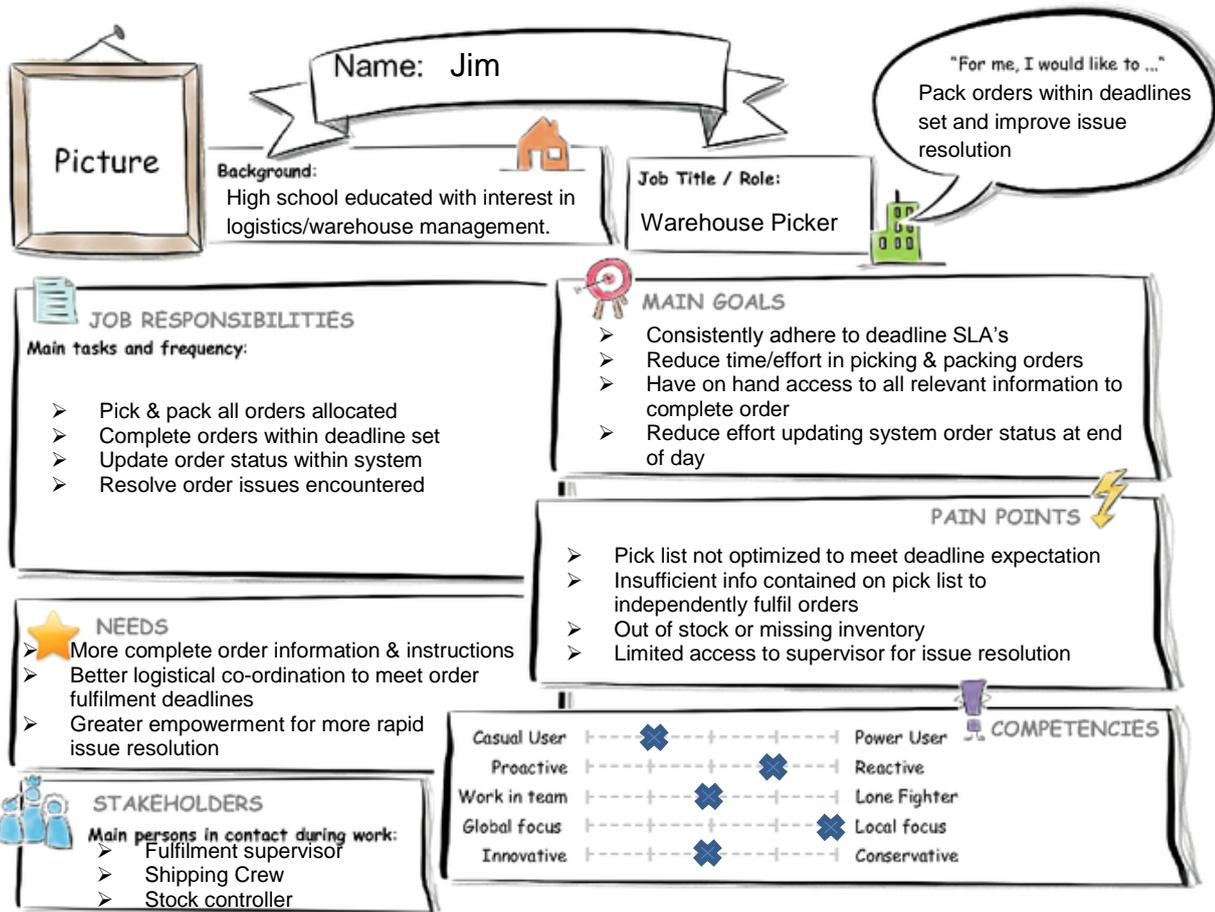
Interaction currently with the SAP system involves printing off orders at the beginning of the day and updating the system at the end of it. Current reliance on paper-based sales order item lists (known as "Pick Lists") cause a number of pain-points amongst warehouse personnel, in particular those individuals picking and packing items. This group of workers are known as "Pick Crew" and it is the tasks that these employees perform that the Fiori App will target. The key benefits being to provide Pick Crew with complete information that will enable them to more effectively fulfil each order, to have real-time order information and instructions on hand, and to expedite issue resolution. Within the fulfilment process, the specific task of picking and packing an order will be the focus of the Fiori App.

The sub-process of order fulfilment as it is currently carried out at WePack4U is as follows:

Print Pick Sheets
- Pick sheets are printed. They contain multiple sales orders and direct the picking crew to locate the different items for those orders within WePack4U's warehouse.

Pick Items
- Items are picked and taken to packing stations.

Pack Items
- Pickers will determine the best packing materials to use, scan the items, then pack them in either one of WePack4U's free jiffy mailers/cardboard boxes or their clients also have the option of using their own branded packing materials.

Insert Packing Docs
- A packaging slip is inserted listing the contents of the package and any other inserts. The package is then sealed and an address label attached. Again, the packing slip can be customized by WePack4U's clients to have a thank you message, or to provide answers to common questions such as the return's policy.

Move order to shipping station
- The package is moved down the line to the shipping station where it is weighed, the address verified for the recipient, and the most cost effective shipping option determined. The packages are then palletized for outbound shipping.

Persona

Jim is one of the Warehouse Pickers at WePack4U. His persona (illustrated below) and the activities that he performs are typical of the work each Picker is required to undertake each day.

Name: Jim

Picture

Background: High school educated with interest in logistics/warehouse management.

Job Title / Role: Warehouse Picker

"For me, I would like to ..." Pack orders within deadlines set and improve issue resolution

JOB RESPONSIBILITIES
Main tasks and frequency:

- Pick & pack all orders allocated
- Complete orders within deadline set
- Update order status within system
- Resolve order issues encountered

MAIN GOALS
- Consistently adhere to deadline SLA's
- Reduce time/effort in picking & packing orders
- Have on hand access to all relevant information to complete order
- Reduce effort updating system order status at end of day

PAIN POINTS
- Pick list not optimized to meet deadline expectation
- Insufficient info contained on pick list to independently fulfil orders
- Out of stock or missing inventory
- Limited access to supervisor for issue resolution

NEEDS
- More complete order information & instructions
- Better logistical co-ordination to meet order fulfilment deadlines
- Greater empowerment for more rapid issue resolution

STAKEHOLDERS
Main persons in contact during work:
- Fulfilment supervisor
- Shipping Crew
- Stock controller

COMPETENCIES

Casual User	—X—	Power User
Proactive	—X—	Reactive
Work in team	—X—	Lone Fighter
Global focus	—X—	Local focus
Innovative	—X—	Conservative

Introduction to Design Thinking
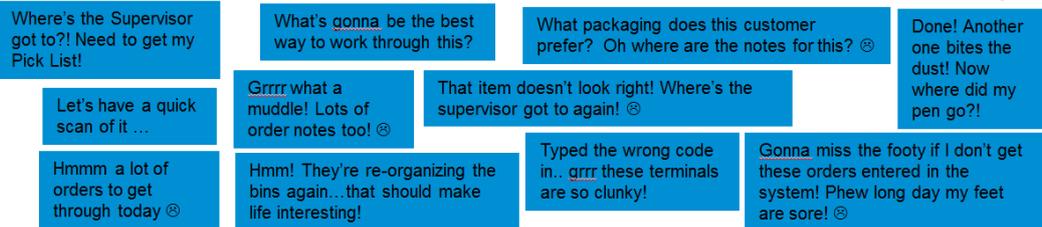## Pick & Pack in Warehouse for e-fulFilment – Jim's Experience

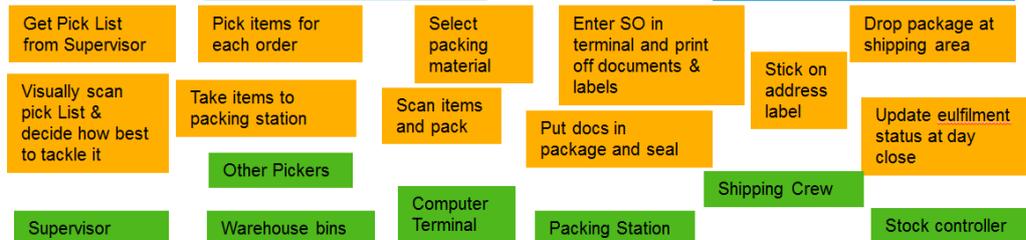## Current User Experience Journey
Duration of the Journey: All Day

Mindset

What is on the Persona's mind while taking the actions of their journey? How do they feel each step of the journey?

- Where's the Supervisor got to?! Need to get my Pick List!
- Let's have a quick scan of it …
- Hmmm a lot of orders to get through today ☹
- What's gonna be the best way to work through this?
- Grrrr what a muddle! Lots of order notes too! ☹
- Hmm! They're re-organizing the bins again…that should make life interesting!
- What packaging does this customer prefer? Oh where are the notes for this? ☹
- That item doesn't look right! Where's the supervisor got to again! ☹
- Typed the wrong code in.. grrr these terminals are so clunky!
- Done! Another one bites the dust! Now where did my pen go?!
- Gonna miss the footy if I don't get these orders entered in the system! Phew long day my feet are sore! ☹

Actions

What actions and activities does the Persona take while going thru the journey to achieve their goal?

- Get Pick List from Supervisor
- Visually scan pick List & decide how best to tackle it
- Pick items for each order
- Take items to packing station
- Select packing material
- Scan items and pack
- Enter SO in terminal and print off documents & labels
- Put docs in package and seal
- Stick on address label
- Drop package at shipping area
- Update eulfilment status at day close

Touch points

What touch points does the Persona have?
(Tools, channels, devices, conversations, and so on.)

- Supervisor
- Other Pickers
- Warehouse bins
- Computer Terminal
- Packing Station
- Shipping Crew
- Stock controller

Further explanation with regard to the pain points already identified by Jim is as follows:

Pain Points:

➢ Order information on the Pick List is only as current as its time of printing rather than real-time information being on hand. WePack4U provide their clients with the ability to change/edit orders. This sometimes means that changes to the order aren't picked up in time to amend the contents of packages before they are dispatched, resulting in returns and rework that could have been avoided.

➢ Pick lists are printed off for each Picker and list sales orders in no particular order. How the Pick Lists are worked through is currently left up to the Picker and relies on their knowledge of the warehouse layout. It was suggested that efficiency for the Picker would be increased if deadlines were made clearer and the Pick List order had some logistical logic applied to it.

➢ In amongst the Pick Lists printed off are other packing instructions and notes. This can introduce mistakes if important instructions are overlooked.

➢ Pickers need to re-enter information into terminals at the packing stations to print out order labels and documentation. Having to key information into a terminal is another step that interrupts the packing process.

➢ If there are issues with an order, the Picker currently has to locate a supervisor and get advice on how to resolve the issue. Time is often wasted trying to locate a supervisor and decisions are made with potentially out of date information.

➢ Each item is often designated an individual storage bin to allow for faster, more efficient order processing. Items that sell the most often are placed closer to order packing stations, which may involve the occasional reorganization of bins. Sometimes reorganisation occurs and there is a delay before new location information is fed back into the system. This can lead to Pick Lists with vital item location information being incorrect.

Needs:

Each pain point was addressed in subsequent brainstorming sessions with Pickers and their Supervisors to generate ideas on what they thought could improve each issue for them. The following list summarises these findings and serves as the functionality baseline for the Fiori App:

⇨ Replace the printed Pick Lists with real-time sales order information on a device

⇨ Separate out any special packing instructions, documents inclusions, and notes from the SO List for clarity

⇨ Apply intelligent logic to the ordering of the Pick List generation process to optimise order fulfilment sequence based on item location within warehouse versus dispatch deadlines to improve overall efficiency

⇨ Display a deadline expectation time on Pick List so Picker can see when they need to fulfil the order

⇨ Enable a "print anywhere" capability from the device to save keying in order information at packing station terminal to print off labels and other packing documents

⇨ Enable direct communication with a supervisor for issue resolution queries

## Fiori App Mock-up with SAP Fiori UX Prototyping Kit:
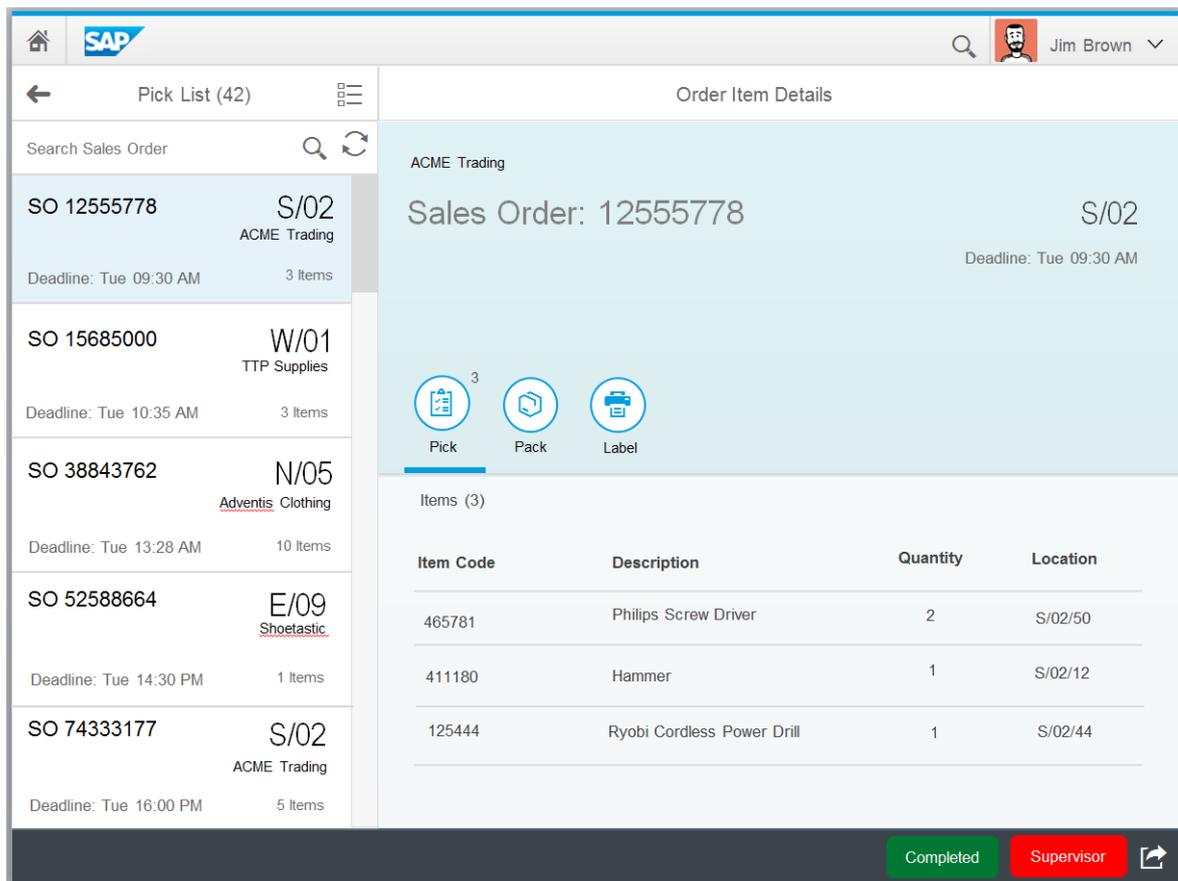
Features & Functions of Fiori App:

The screen shot above illustrates one of the screen mock-ups for the Fiori App. Listed below is its functionality and behaviour:

✓ Paper-based Pick Lists are now replaced by Fiori App using Master/Detail template based on Approval Style App

✓ Real-time sales order information now available to Pickers at all times

✓ Master List displays sales orders in optimised listing with *Deadline* for order fulfilment clearly visible, *Warehouse Location* of client's inventory displayed, and *Item count* illustrating size of order

✓ Detail section information displayed under 3 tabs:

   o Pick List items displayed for each sales order under **"Pick"** tab with pick *location*, *product code* & *quantity* information provided

   o Special instructions and packing notes now clearly available under **"Pack"** tab for a specific order

   o Under the **"Print"** tab, ability to print address labels and accompanying documents on demand at any packing station, eliminating the need for Picker to call up order again on a terminal

- ✔ When order complete, Picker presses **"Completed"** button to update status of sales order. SAP system is automatically updated and the completed order removed from Picker's Pick List. Number of orders still to complete updated in Master header. Eliminates need for Picker to update system at day close.

- ✔ Pressing the **"Supervisor"** button enables Picker to enter text about an issue encountered which is then sent immediately to Supervisor for resolution.

Fiori Prototype Screen Shots from SAP Web IDE:
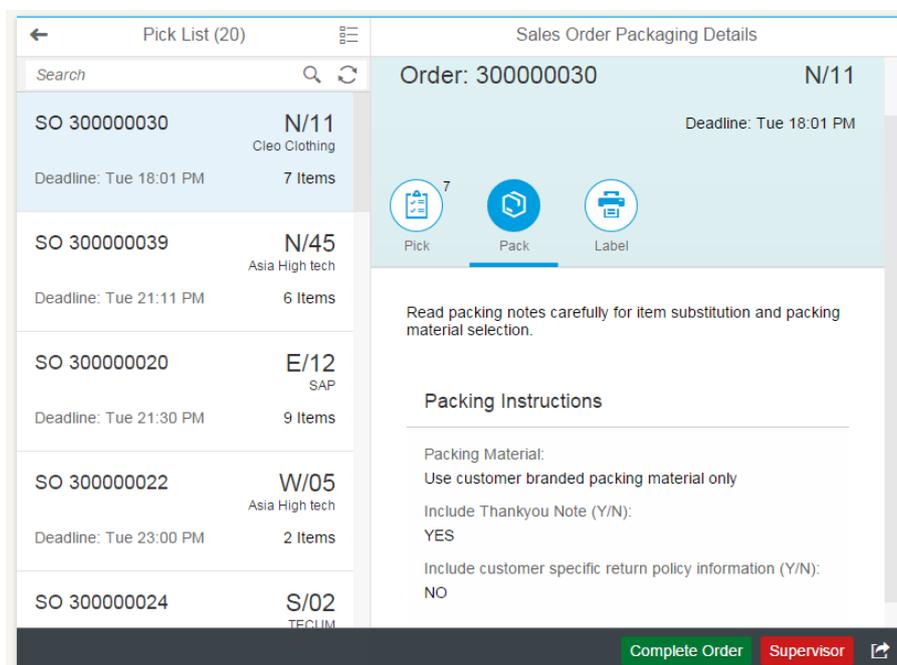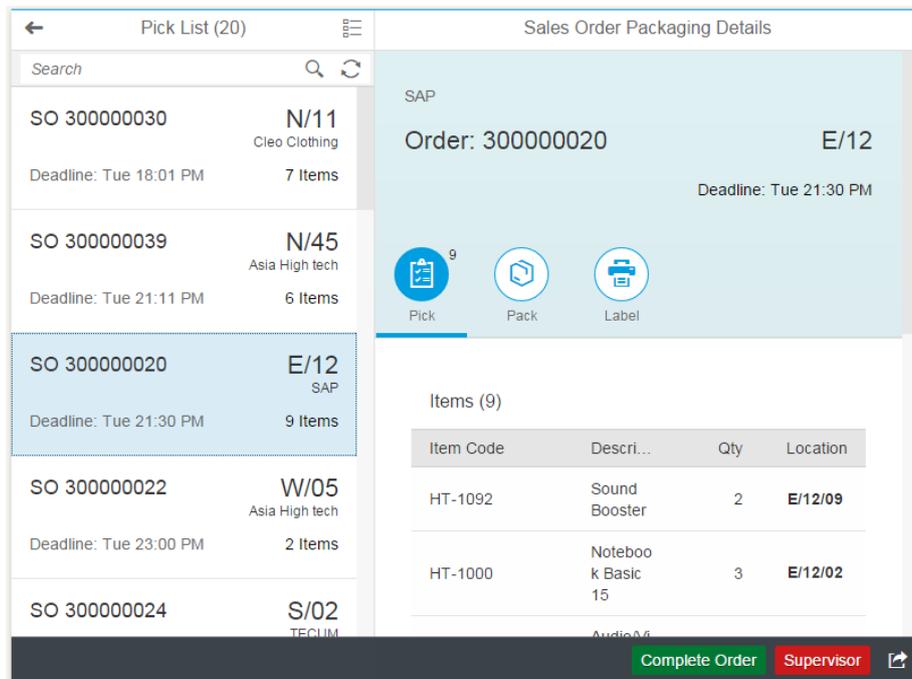
N.B. ** Please refer to Video submission for interactive App Walk-through on SAP Web IDE and further functionality/screens **