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Brewing with Of-Biz

Case Study Implementation
@ Birrificio San Paolo

Turin, Italy

APACHECON
EUROPE

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Who am I



- OFBiz Contributor since 2008
- Founder & owner of SOMONAR B.V. & ORRTIZ.COM
 - Consultancy, design & implementation **OFBiz** solutions
 - Cloud based OFBiz hosting
- But also:
 - Husband & Father
 - Enjoyer of the good things in life & Questioner of practices & habits
 - often involves **beering** with friends & relatives
 - ASF Contributor
 - Apache Directory Committer

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Beer

- What

Water, Starch (Malts), Yeast (Brewers), Flavors (fruits, herbs, spices)

- How

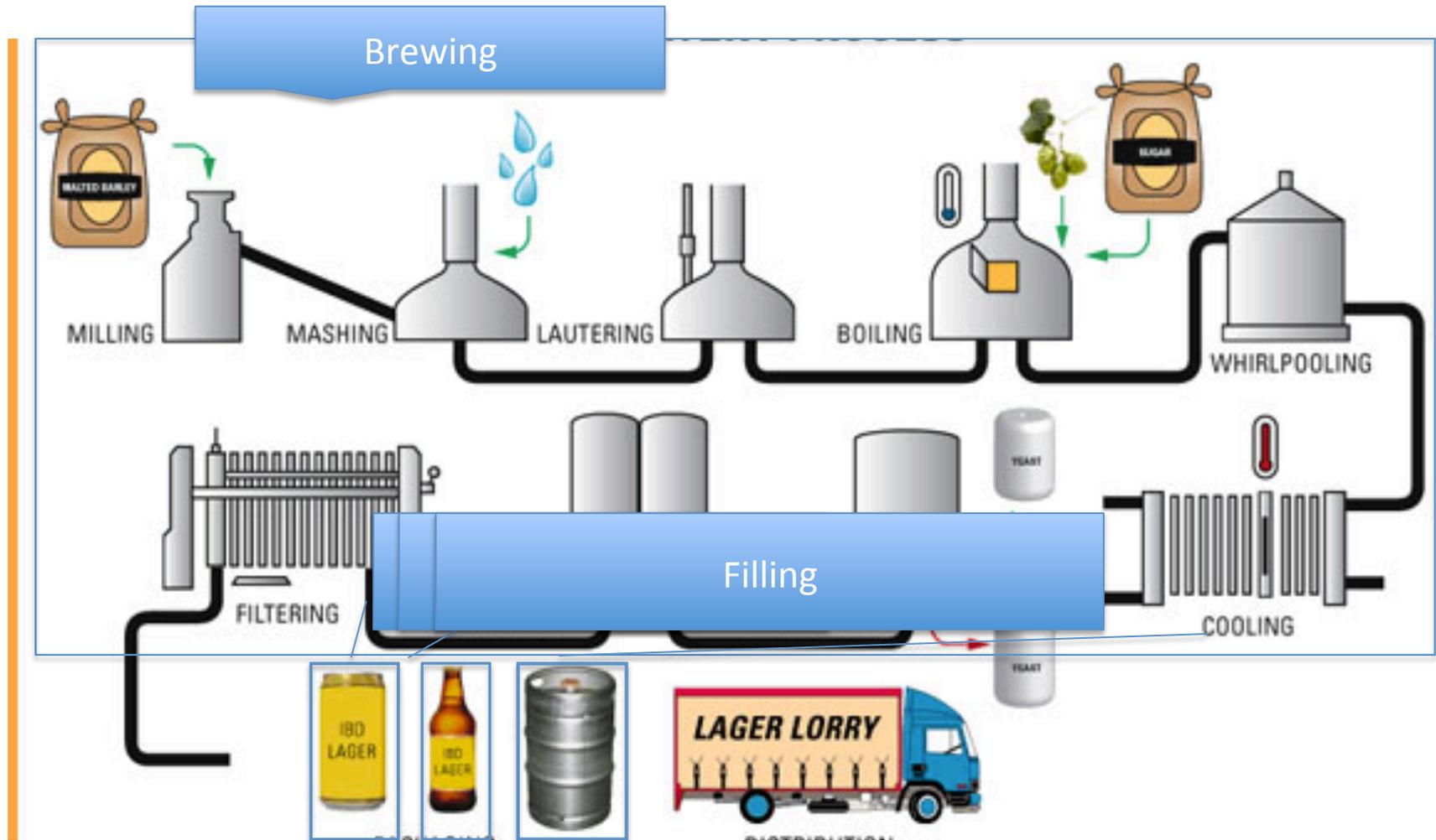
Converting the starch in grains to sugar, adding flavour, converting the sugar to alcohol & CO₂

- Result

Beverage

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Brewery Processes



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Birrificio San Paolo

- Small, Craft
- 10 styles, plus specials
 - Bottles: 2 types (33cL & 75cL)
 - Kegs: 2 variants (20L & 50L)
- Main market: Italy, but exports to EU, Australia, US
- 2012: 1.000 hl/year, 2014: 5.000 hl
- Front: Pub (packed every night!)
- <http://www.birrificiosanpaolo.it/>



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Issues to address

- Brewer & Brewing Process
- Recipes
- Tracking lots/batches
- Kegs
- Excise
- Usability/Experience

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Brewer

sMB != LE (Excel at best, paper at least)

Brewer = alchemist, artist, creator

Brewer  administration

Brewer **KNOWS** best, Brewer = **RIGHT** (always)

Brewer != consultant, != developer

Manufacturing != Creating

Production Equipment = Storage Location

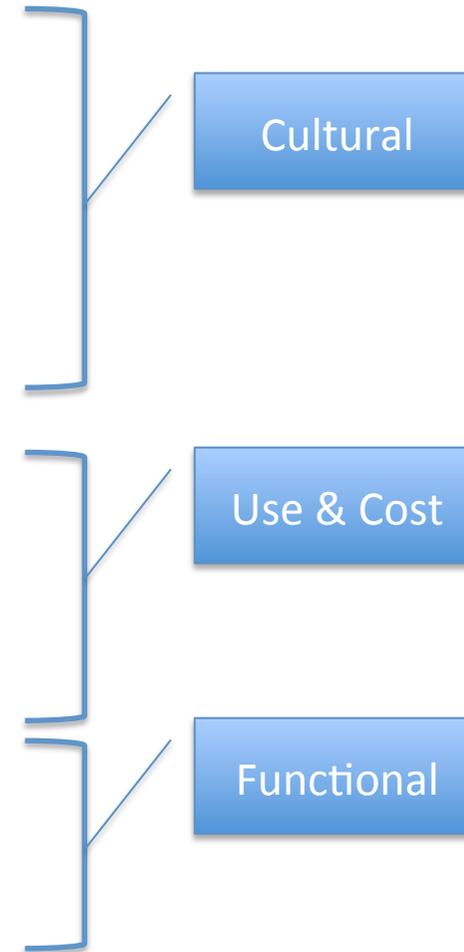
Water

Consumable (cleaning, etc)

Ingrediënt

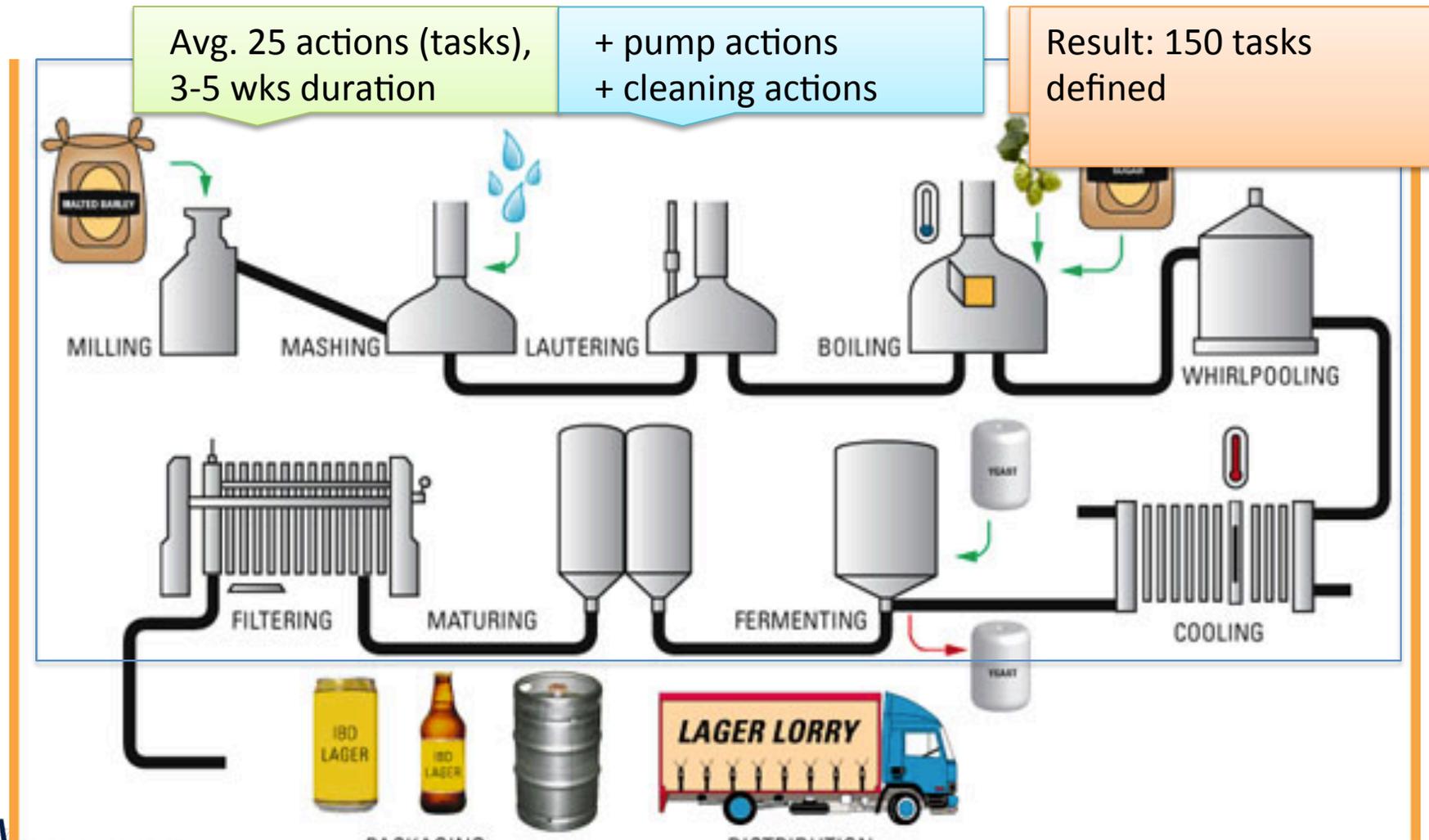
SFA != CRM

OrderMgr != CRM | SCM



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Brewing Process



Avg. 25 actions (tasks),
3-5 wks duration

+ pump actions
+ cleaning actions

Result: 150 tasks
defined

Action Reduction

Tasks
Routing Task
Shredding Malts [PREP-1]
Add hot water [BREW-10]
Add malt no 1 [MALT-101]
Mash stage no 1 [MASH-201]
Heat 10 min [MASH-310]
Mash stage no 2 [MASH-202]
Heat 45 min [MASH-345]
Mash stage no 3 [MASH-203]
Heat 5 min [MASH-305]
Sparge brew [BREW-450]
Lauter wort [BREW-480]
Wort cake removal [BREW-490]
Heat 15 min [MASH-315]
Add hop no 1 [HOPS-501]
Boil 55 min [BOIL-655]
Add flavor no 1 [FLAV-511]
Boil 30 min [BOIL-630]
Add hop no 2 [HOPS-502]
Boil 5 min [BOIL-605]
Add yeast [FERM-701]
Ferment 3 days [FERM-753]
Remove yeast residue [FERM-790]
Pump [MISC-9001]
Lager beer 28 days [LAGER-828]

Tasks
Routing Task
Shredding Malts [PREP-1]
Mash stage [MASH-200]
Boil 90 min [BOIL-690]
Ferment 3 days [FERM-753]
Lager beer 28 days [LAGER-828]

10 actions
=
acceptable!

In OFBiz:
• 25 tasks =>
50 click actions
• 5 ingredients =>
actions
• 3 outputs => more
actions
• (pumping + cleaning
+ measuring)

> 50 actions =
Unacceptable

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Recipe Management

- Product = Lifecycle
- Marketing Product
 - Brand & style = everlasting
 - But flavor appeal may change
- Technical product
 - Limited lifespan
 - Ingredients
 - (compatibles, additionals)
 - Location

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Recipe

Recipe			
Recipe / Rev.	10000 / 1	Name	HissVat 0001 Beer 5%
From	2013-01-01	Thru	
End Product	HissVat 0001 Beer 5% (id: HissVat-0001B5)	Schema	Demo Beer Brewing (id: BREW_DEMO)
Std Quantity	1 Hectoliter (hL)	Facility	Default Facility (id: DEFAULT)
Status	In Use		

Tasks - ingredients and by-products			
Task	Mash stage (id: MASH-200)		
Setup	12,600,000	Execution (per unit)	0
Product In	WATER - Water (100 Liters + 20% scrapFactor = 120 Liters)		
Product In	M-PALE-ALE - Pale Ale (20 Kilograms)		
Task	Boil brew for 90 minutes (id: BOIL-690)	Product Out	WORT - Wort
Setup	5,400,000	Execution (per unit)	0
Product In	H-SAAZ-F - Saaz (200 Grams)		
Task	3 days Fermenting (id: FERM-753)	Product Out	YEAST-RES - Yeast Resid
Setup	259,200,000	Execution (per unit)	0
Product In	Y-BELLS-500 - Bells Salson (1 pack)		
Task	28 days Lagering (id: LAGER-828)		
Setup	2,419,200,000	Execution (per unit)	0

Tasks - Instructions

Task	Mash stage (id: MASH-200)
Instructions / Rev	10000 / 0001

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Batch/Lot Management

Accountability! **&** Brand perception!

- Regulations by law, differences per country
- Inbound: ingredients, components
 - bags, boxes, pallets, containers
- Outbound: products produced
 - In glass, keg, cans, etc.
 - Packed other packages: boxes, pallets

=

extensive **Track & Trace** required

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Lot Details

Lot									
Product	Pale Ale mout (ID: M-PALE-ALE)								
Manufacturer	Holland Malt (ID: HOLLANDMALT)								
Date Manufactured	9/1/14 12:00:00 AM				Lot Ref.	12aq1223			
					Expiration Date	9/1/15 12:00:00 AM			

Inventory Items														
ID	Date Time Received	Type	Status ID	Product	Party Id	Facility	Location Seq Id	Type	Container	Bin Number	Serial Number	Soft Identifier	UoM	ATP total / QOH total
10000	2014-11-04 00:00:00.000	Non-Serialized		Pale Ale mout [M-PALE-ALE]		Default Facility								2,340 / 2,340

Inventory Details For [10000]																	
Inventory Item Detail Seq Id	Effective Date	Quantity On Hand Diff	Available To Promise Diff	Accounting Unit Quantity Diff Cost	Order Order Item Seq Id	Ship Group Seq Id	Shipment Id	Shipment Item Seq Id	Return Id	Return Item Seq Id	Work Effort Id	Fixed Asset	Maint Hist Seq Id	Item Issuance Id	Receipt ID	Physical Inventory Id	Reason Description UoM
10011	2014-11-04 10:20:05.431	-160	-160	0							10001						
10001	2014-11-04 09:50:24.207	0	0	2,500													
10000	2014-11-04 09:50:08.225	2,500	2,500	0											10000		Pale Ale mout

Shipment Receipts for [10000]														
Receipt ID	Product Id	Shipment Id	Shipment Item Seq Id	Shipment Package Seq Id	Order Id	Order Item Seq Id	Return Id	Return Item Seq Id	Rejection Id	Received By User Login Id	Date Time Received	Item Description	Quantity Accepted	Quantity Rejected UoM
10000	M-PALE-ALE									admin	2014-11-04 00:00:00.000		2,500	0

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Keg Track & Trace

Customers & Kegs (filled with beer)

10 -> Customer != 10 -> Warehouse

Returned Kegs = Empty Kegs! Dirty Kegs

Kegs = Assets = Money

Inspection, Cleaning, Scrapping

Track & Trace needed

complex Inventory Management & Reporting

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Excise Calc & Reporting

- Aspects to consider
 - Regulations (how)
 - Products & Rates (what)
 - Delivery (who)
 - Reporting intervals (when)
 - Reporting structure (where)
- Tax Authority, Products & Categories, Rates
- Custom Reporting

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Of-Biz applied

CRM (CUSTOMER Relation Mgt)

SFA,ORDER,ACCOUNTING,PARTY, **Cust**

SRM (SUPPLIER Relation Mgt)

SFA,ORDER, ACCOUNTING,PARTY,PRODUCT ,**Cust**

MFG (Production Mgt + Recipe Mgt)

MANUFACTURING, **Cust**

WHM (Warehousing & Batch/Lot Mgt)

FACILITY , **Cust**

EAM (Equipment, Asset Mgt & Keg T&T)

ASSETMAINT, **Cust**

TRM (Excise Calc & Reporting)

SPECIAL: ACCOUNTING,PARTY,PRODUCT,FACILITY

TERR (Travel Expense Registration & Review)

SPECIAL: ACCOUNTING,PARTY,PRODUCT

TIME (Time Registration & Review)

SPECIAL: PROJECTMGR,PARTY

+

Customizations to ACCOUNTING, COMMONEXT, COMMON

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Conclusions

Perfect for

Assembly manufacturing

Process Oriented manufacturing

And the Rest, of course

OOTB easy to implement
relatively

But...

1st : Tailor to Organisation & Process

2nd : Customize Technical Aspects

Don't Release Code, Release Solutions

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