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Brewing with OFBiz

Case Study Implementation
@ Birrificio San Paolo

Turin, Italy

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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

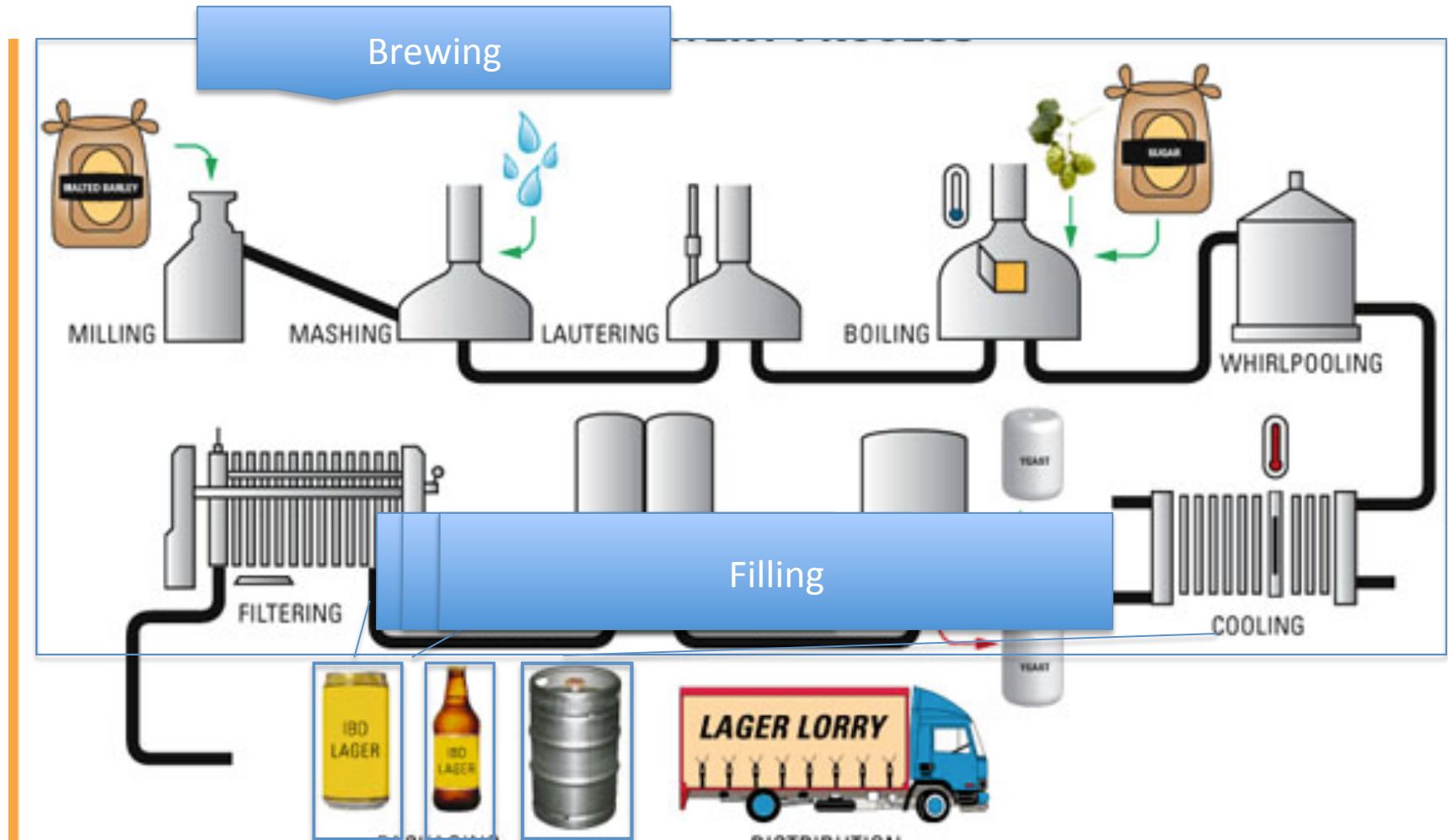 Water, Starch (Malts), Yeast (Brewers), Flavors (fruits, herbs, spices)

- ## How

  Converting the starch in grains to sugar, adding flavour, converting the sugar to alcohol & CO_2

- ## Result

  Beverage

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Brewery Processes

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

- People &Process

- Recipes

- Tracking lots/batches

- Kegs

- Excise

- Usability/Experience

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Keyplayers

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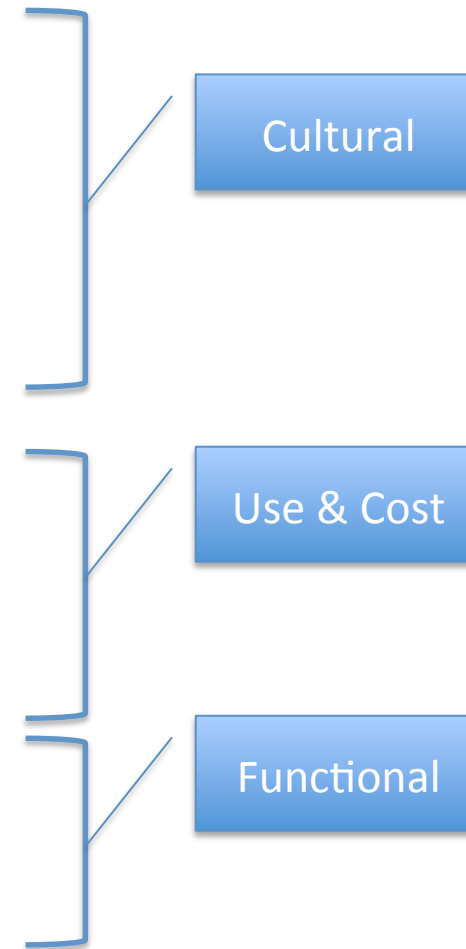# Brewer

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

Cultural

Use & Cost

Functional

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Brewing Process

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

+ pump actions
+ cleaning actions

Result: 150 tasks defined

MILLING   MASHING   LAUTERING   BOILING   WHIRLPOOLING

FILTERING   MATURING   FERMENTING   COOLING

IBD LAGER   IBD LAGER   LAGER LORRY

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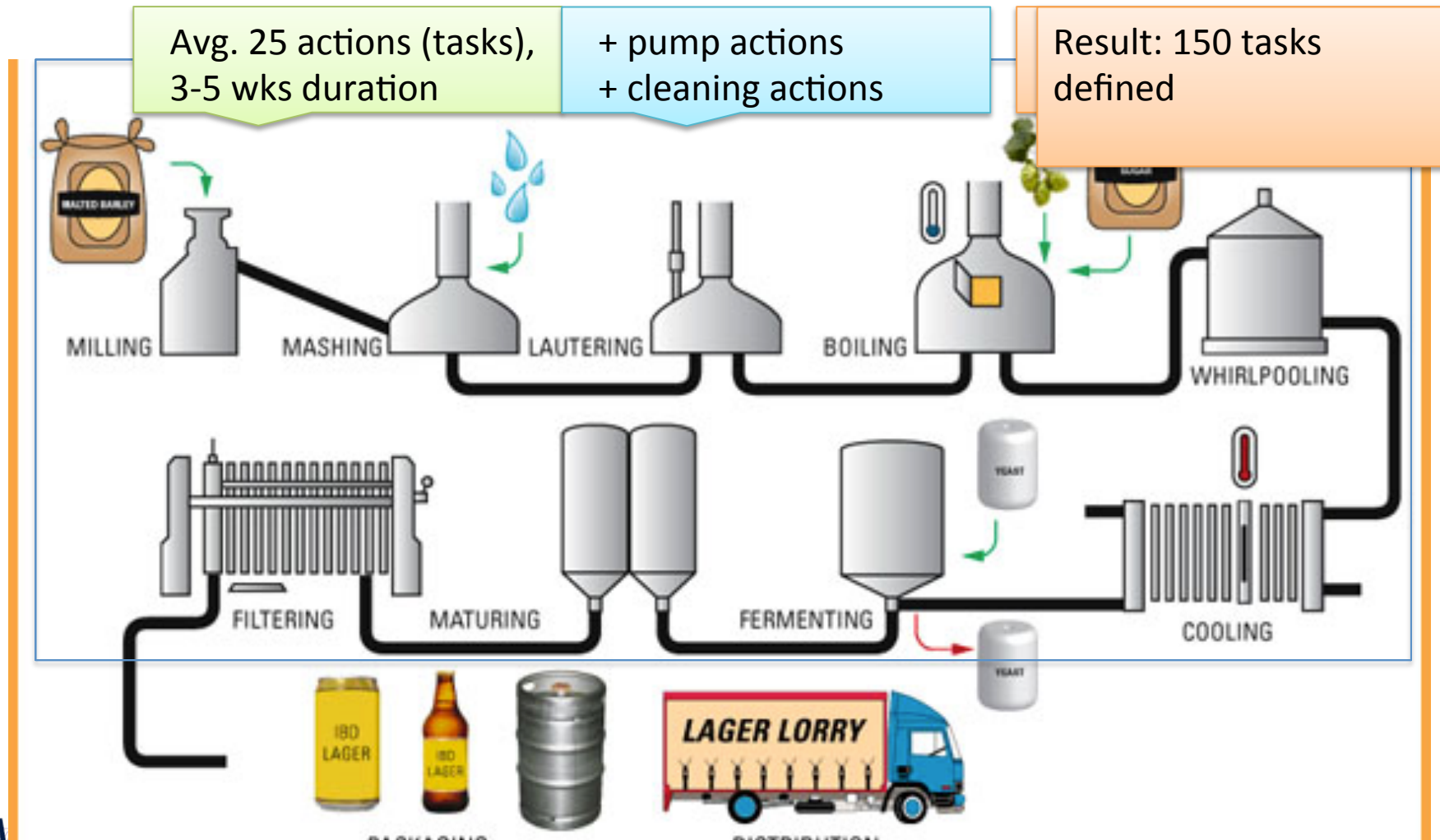
Action Reduction

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 ingredient 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 / 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 Saison (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 Id	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 Id	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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OFBiz 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, ASSETMAINT, **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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