

FOOD SAFETY | SUSTAINABILITY | QUALITY

FoodReg 



**Implementing traceability in
stand-alone companies**

Who is talking?



- Heiner Lehr, Technical Director FoodReg
 - PhD Chemistry, Technical University Berlin
 - Expertise:
 - food information management
 - traceability
 - sustainability
- Advises companies & governments on practical aspects of traceability
- FoodReg supplies IT systems to the agri-food industry
 - Compliance management
 - Food information management and traceability
 - Sustainability



Aim of the presentation

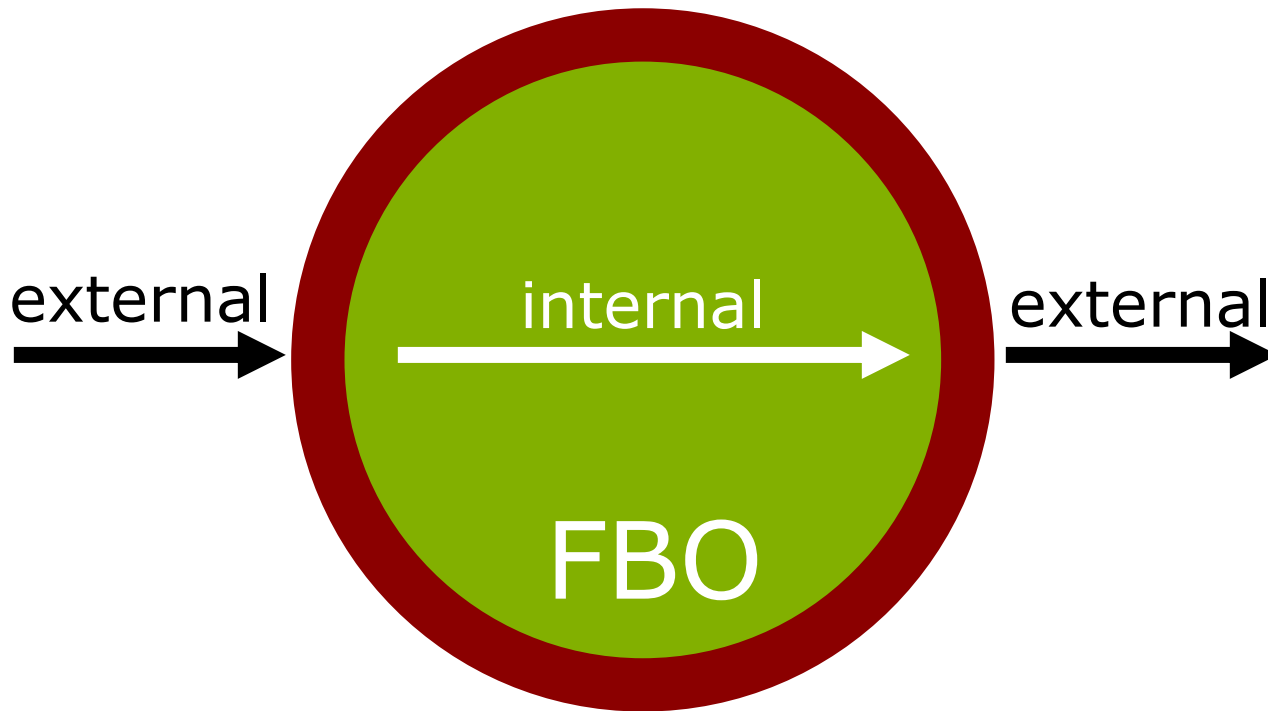
- My assumption
 - You want to implement traceability at your company
 - You have read or heard about traceability and want to know more
 - You already have implemented traceability and would like to improve it

- Your concerns probably are
 1. Traceability is complicated
 2. Traceability is just more work and little return
 3. Traceability is putting me into a straight jacket

- I am trying to give you three practical cases demystifying traceability

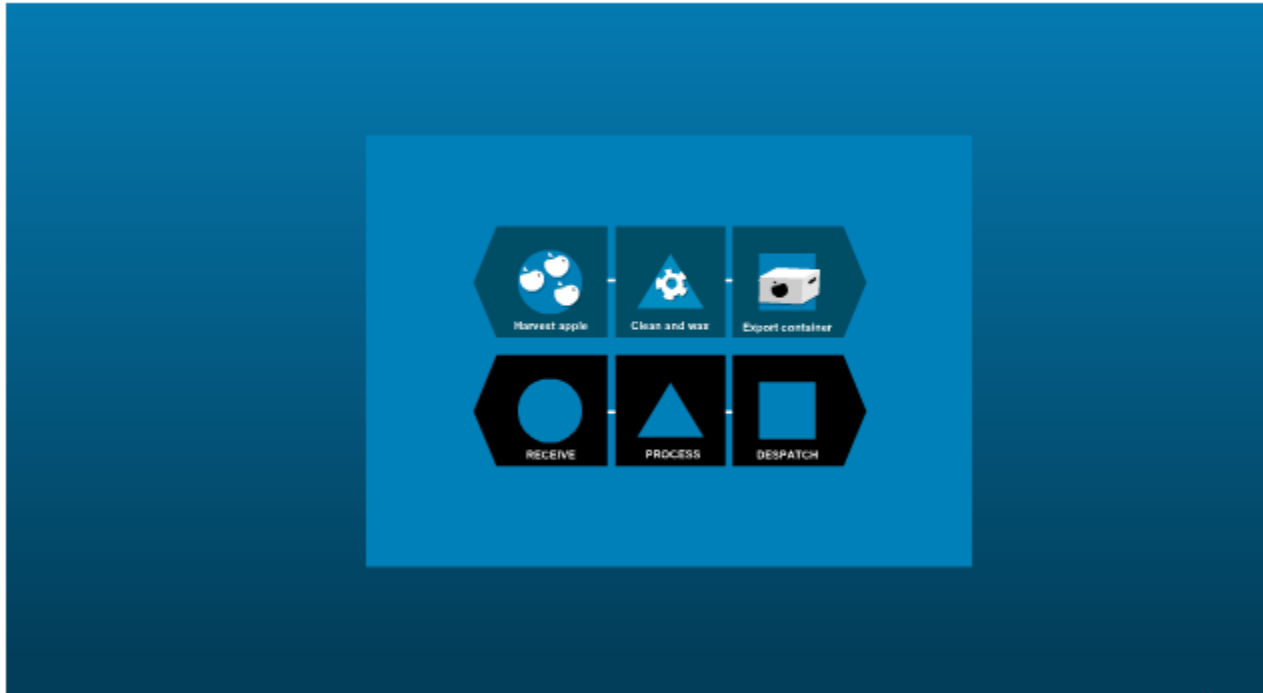
- More info on traceability? Check out: www.foodtraceability.eu







Traceability and its complexity

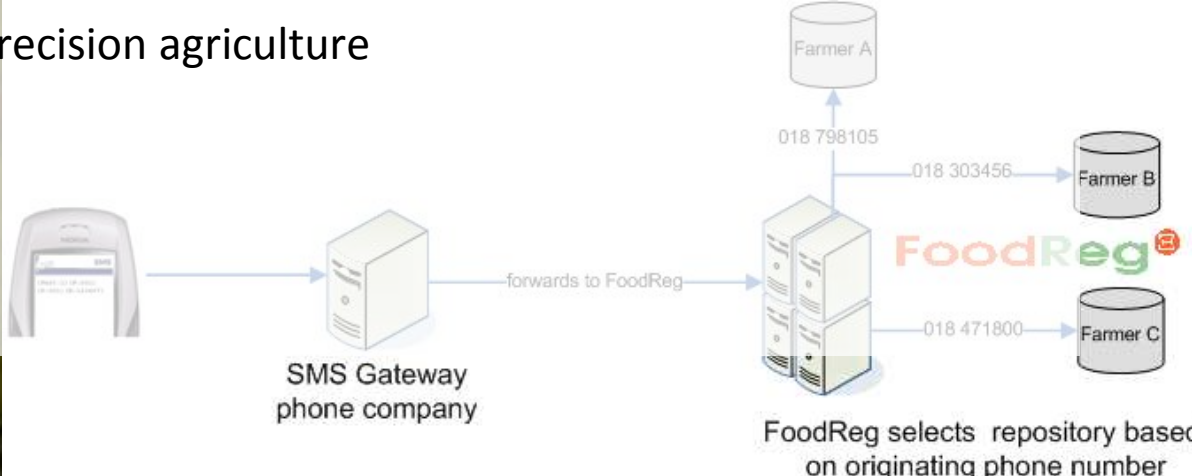


- ❑ Any internal traceability system can be mapped to three simple processes if you want to
- ❑ So traceability is only as complex or as simple as you need it to be!
- ❑ Degree of complexity is function of the control you want to have



Practical case 1: Fruit growing

- Problem
 - No electricity on field/packing station, no internet on field
 - Little knowledge of internet enabled technologies
- Solution:
 - Data capture via mobile phone on-field
- Benefit
 - Reports to help participants cope with their red tape
 - First step towards precision agriculture
 - Faster cash flow



Further reduction of data capture needs



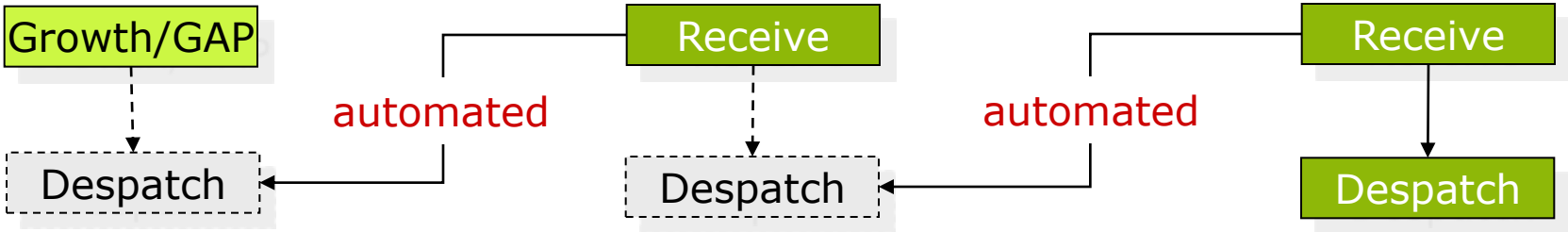
Farmer



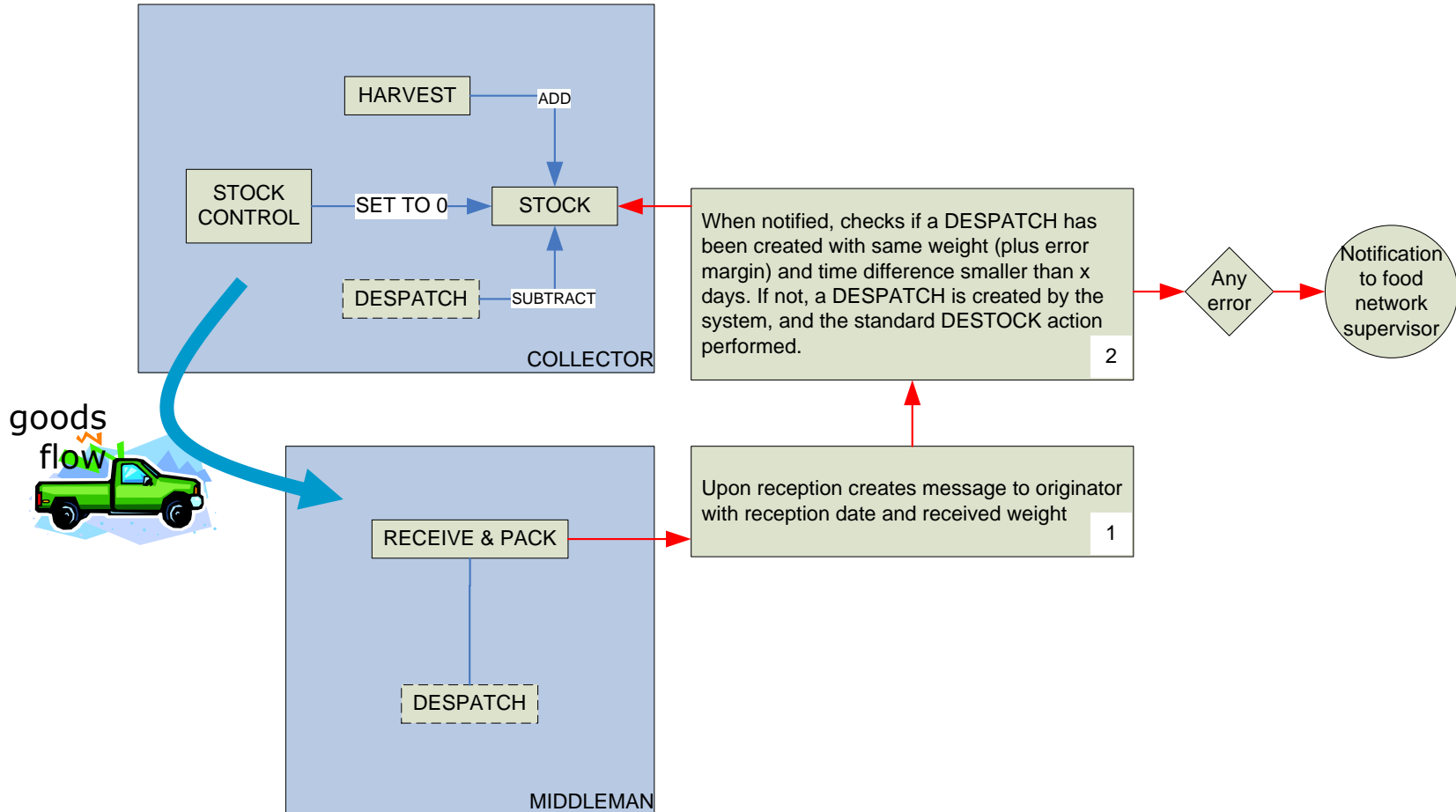
Collector



Exporter



Optional despatch for collectors





Somewhat more sophisticated

- Add 2D barcodes for a full precision agriculture solution
- Services:
 - Pay as you pick
 - Just in time picking
 - Advanced warehouse planning
- A simple demo shown in Centre of Excellence for AIDC
- www.aidc.org





Traceability and its rewards

Practical case 2: Palm oil

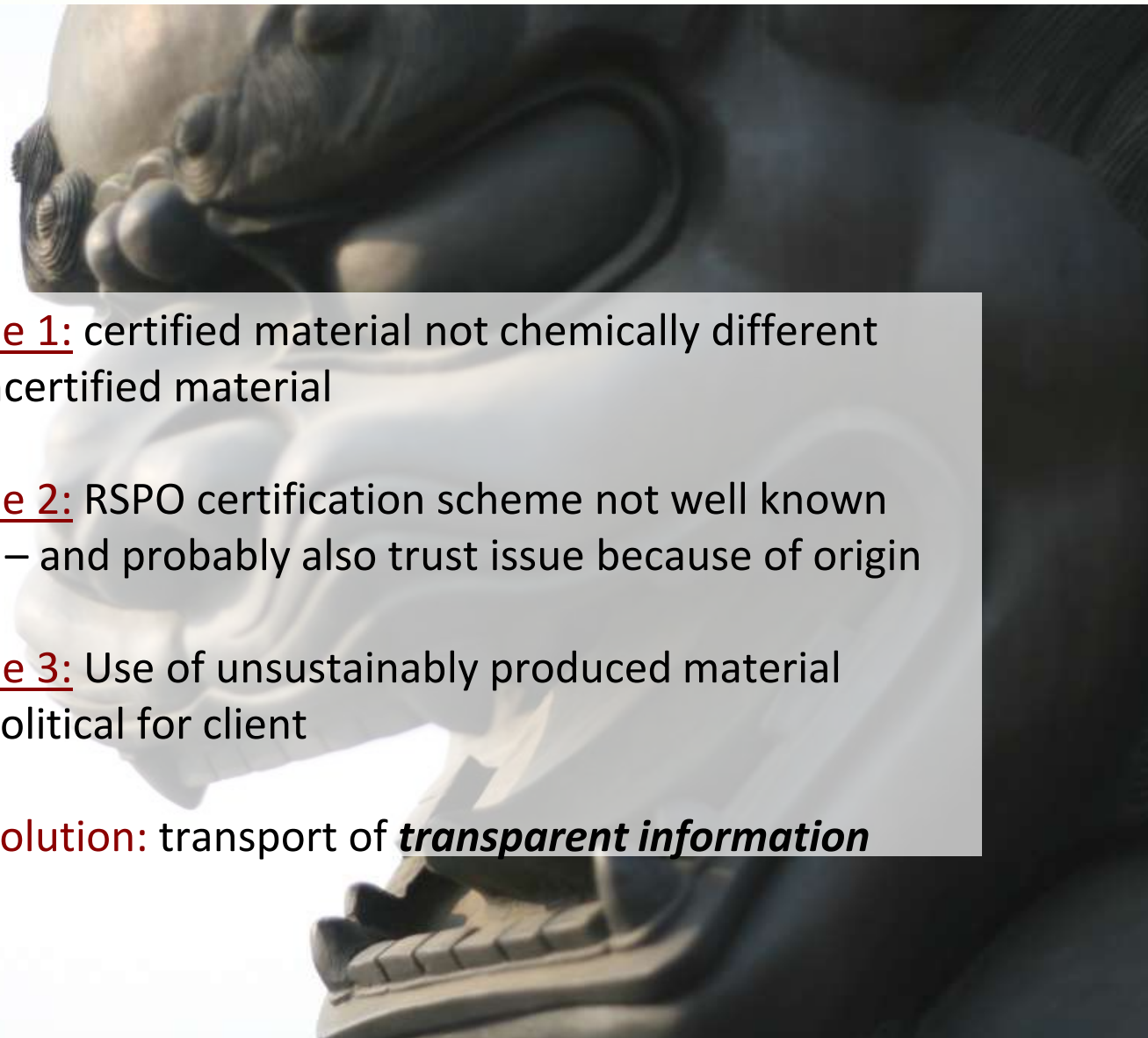


- Vegetable oil
 - Used in almost all processed food
 - Cooking oil for large parts of Asia
- Excellent oil source, very high yields when compared to other oilseed
- Used also for biodiesel
- But
 - Older production processes highly unsustainable (mainly forest burning, peat destruction)
- Therefore
 - A new standard: Roundtable for sustainable palm oil

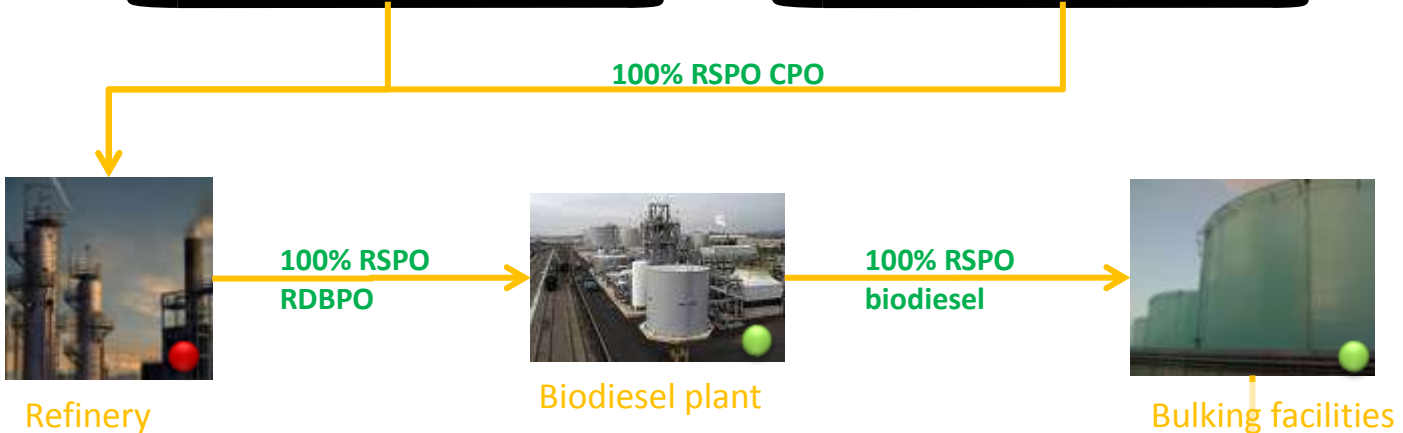
RSPO

Roundtable on Sustainable Palm Oil



- 
- Key issue 1: certified material not chemically different from uncertified material
 - Key issue 2: RSPO certification scheme not well known enough – and probably also trust issue because of origin
 - Key issue 3: Use of unsustainably produced material highly political for client
 - Key to solution: transport of ***transparent information***

CSPO traceability

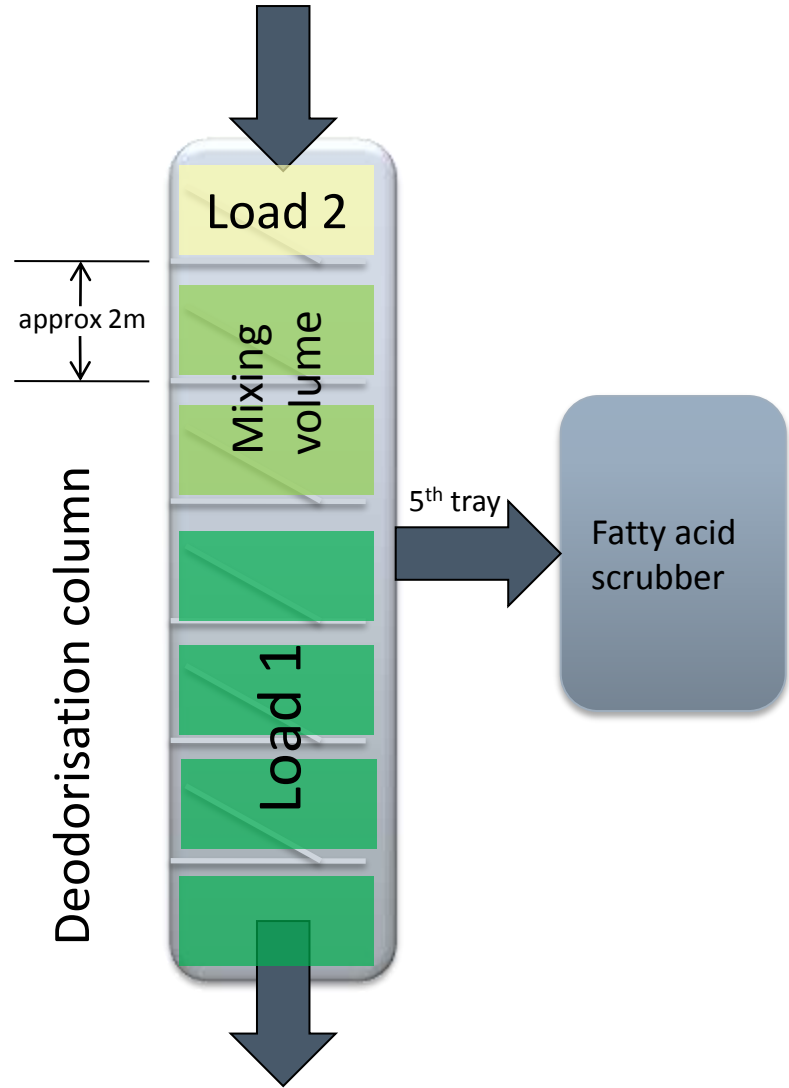
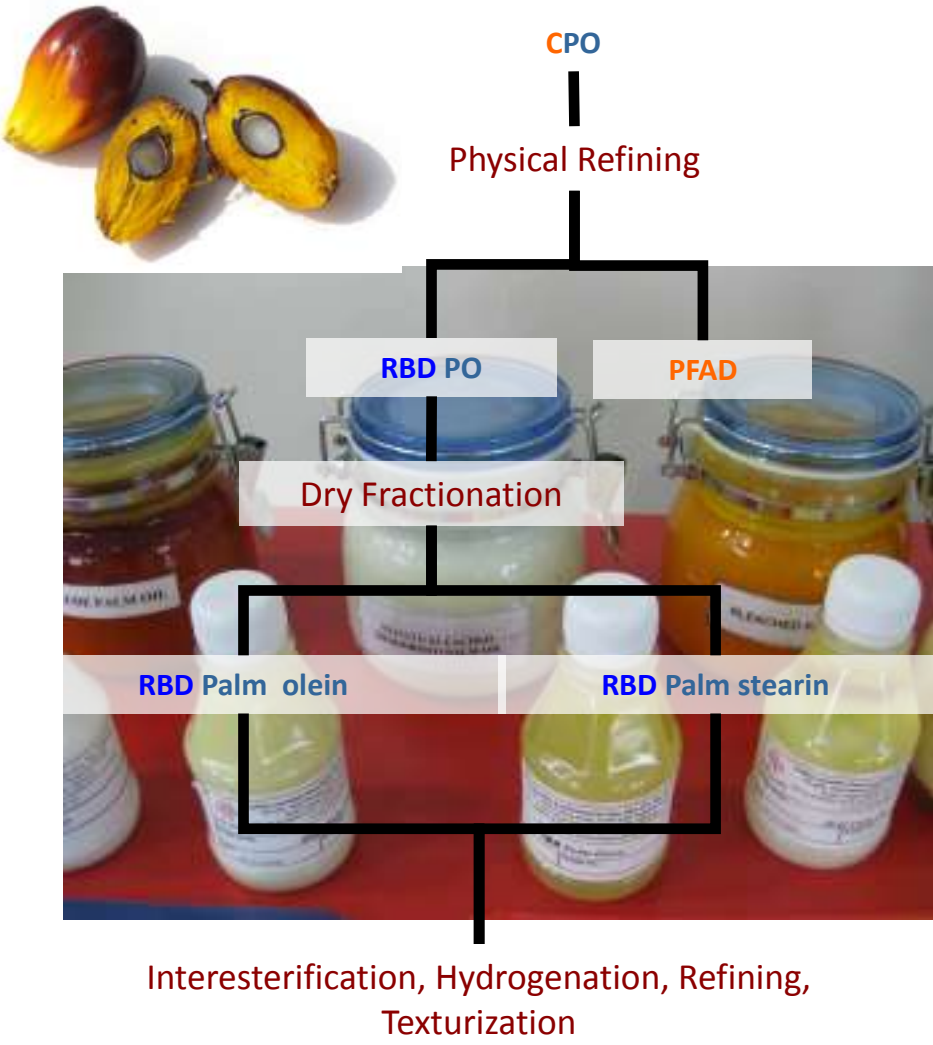


Legend

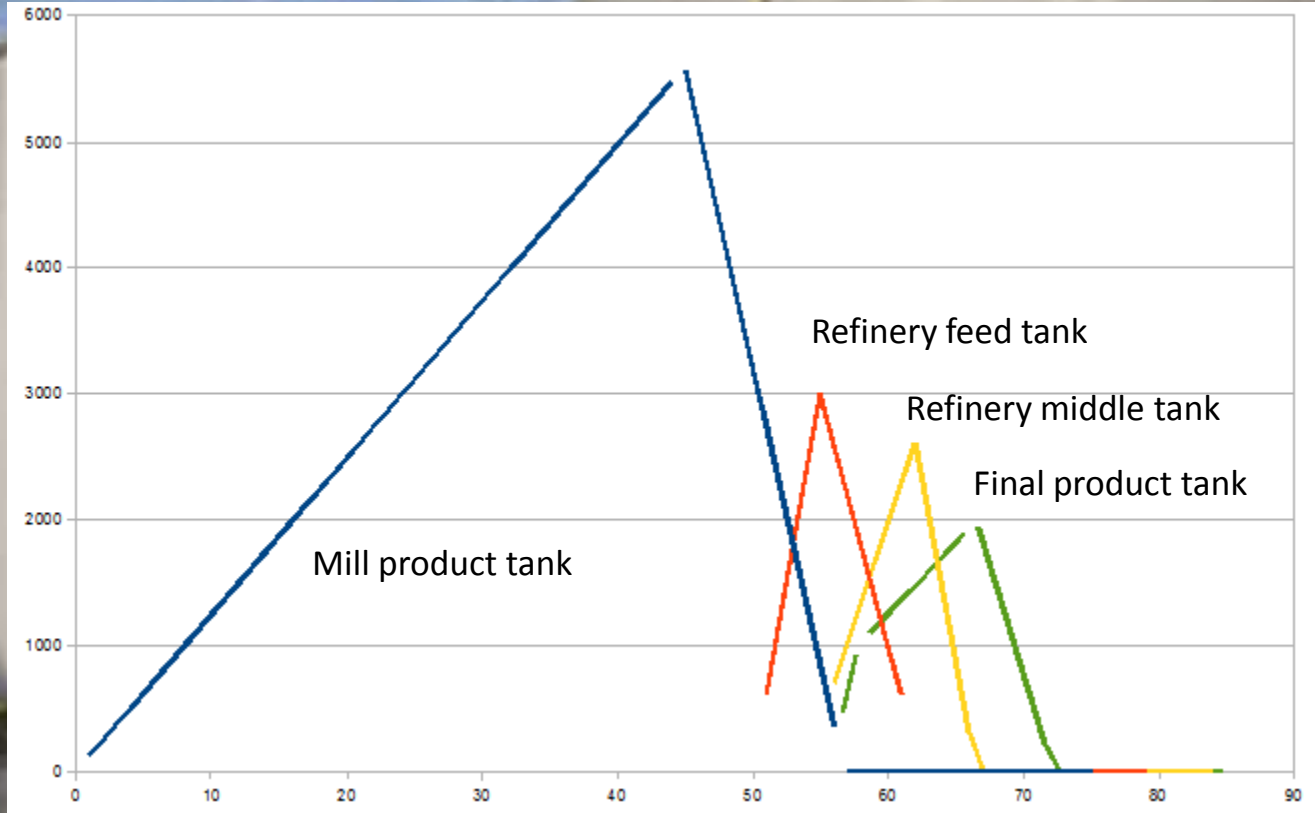
- Mixing occurs
- No mixing



How to deal with the mixing at the refinery?



Tanks and load profiles





- Most data was there anyway, but linking the data together is key
 - Think of it as having a box full of paper bills as opposed to an accounting system

- Sime Darby got a number of benefits from this exercise
 - Market access: based on their excellent track record and the promise of full traceability data won large supply contract
 - Market differentiation: Sime Darby now able to deliver fully documented sustainable palm oil
 - Market permanence: Sime Darby can demonstrate their sustainability policies to stakeholders
 - Commercial feasibility: Sime Darby can command a premium for additional traceability information
 - Payback of traceability system with a single contract



Traceability and breathing space

Practical case 3: wine



- Mallorca is a small and lovely island in the Mediterrean Sea

- It is known for
 - Beaches
 - The Spanish kings' holiday residence
 - Lots and lots of tourists
 - Highly enthusiastic alcohol consumption

- It is not known for
 - Poetry (George Sand)
 - Music (Chopin)
 - Its excellent wines!





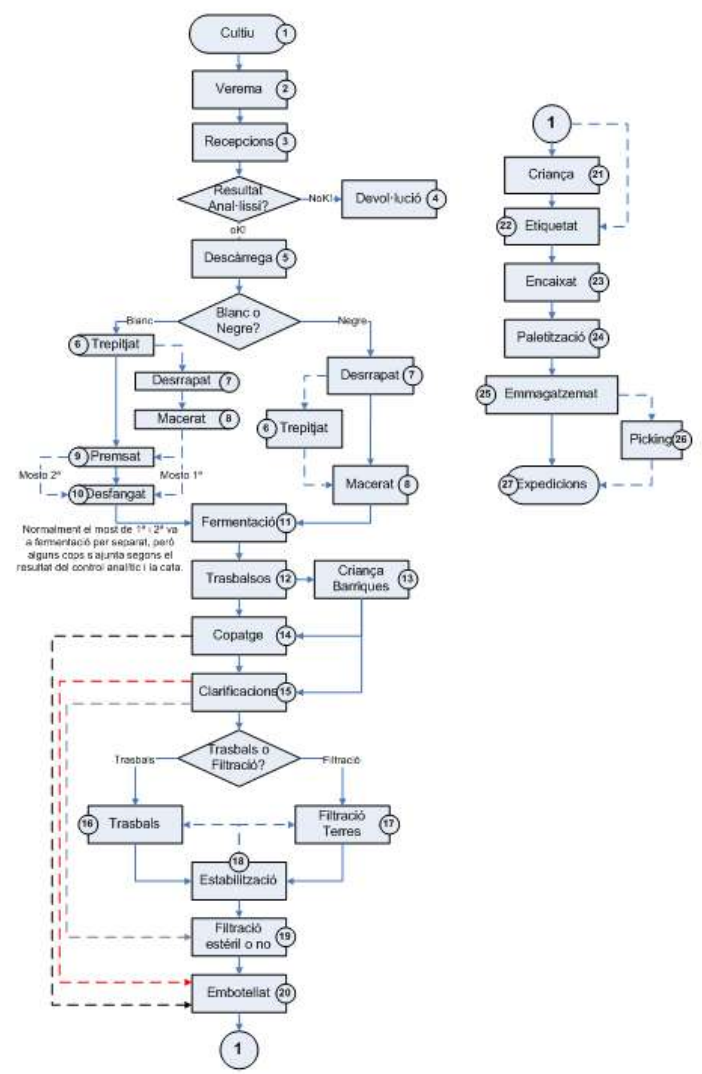
Wine production

- Wine production is a
 - highly complex production process
 - Takes 27-32 steps to produce a decent red

- Strongly regulated
 - Alcohol tax
 - Quota for regional products
 - European quota

- Very traditional, craft-type environment

- Retro-feeding normal
 - Almost infinite blending
 - (Reverse logistics)





- Key challenge 1: Traditionally not an IT environment
- Key challenge 2: Contract farming heavily used
- Key challenge 3: Bulk product, no identifiers



- “Analogue” traceability is traceability without identifiers

- Reasons to use analogue traceability
 - Sometimes sticking an ID on goods is not an option
 - In some processes mixing occurs very naturally and segregation is not possible
 - Unsophisticated logistics might prevent using identifiers
 - Perhaps identifiers don't fit into working culture or workers' capacities



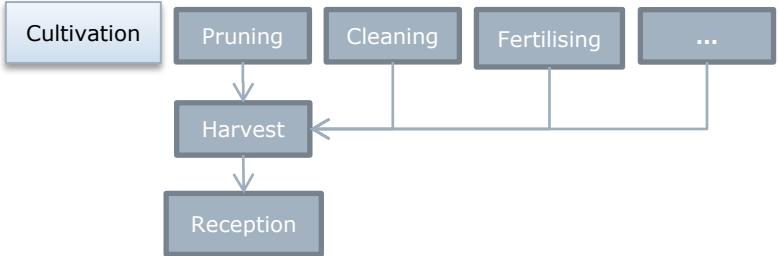
□ Process

- The vineyard is prepared over the year with a number of agricultural practices (soil preparation, pruning, etc)
- Grapes are harvested by plot and variety (different harvest dates)
- Harvest happens once per year per plot and variety
- Grapes are transported in a little truck to marketing group



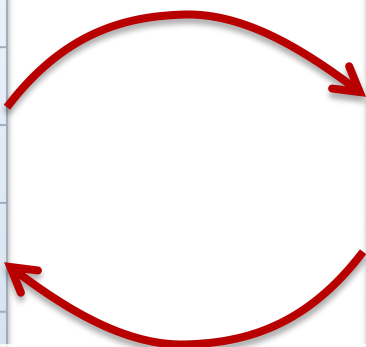


Traceability field to reception



Agricultural Practice
Pruning
Cleaning
Fertilising
Phytosanitary treatment
Ripeness control
...

The next harvest in time for the same location



Between harvest and harvest for the same location all agricultural practices

Harvest	
Polygon	
Parcel	
Grape	Variety
	Grade
	Quantity
Start time	
Duration	
Equipment	

All receptions within the next number of days for the same location

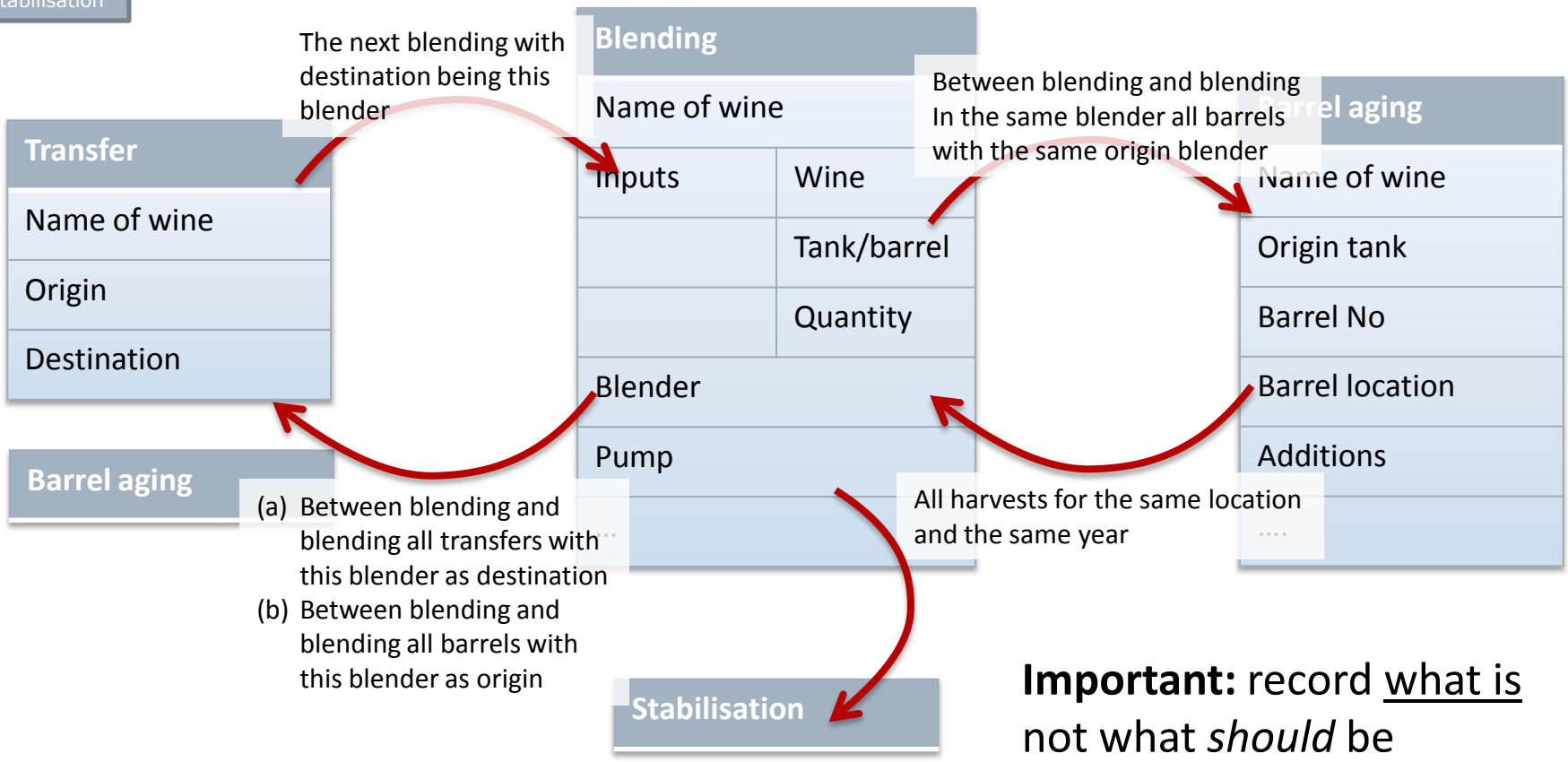
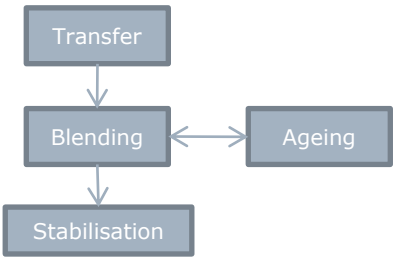


All harvests for the same location and the same year

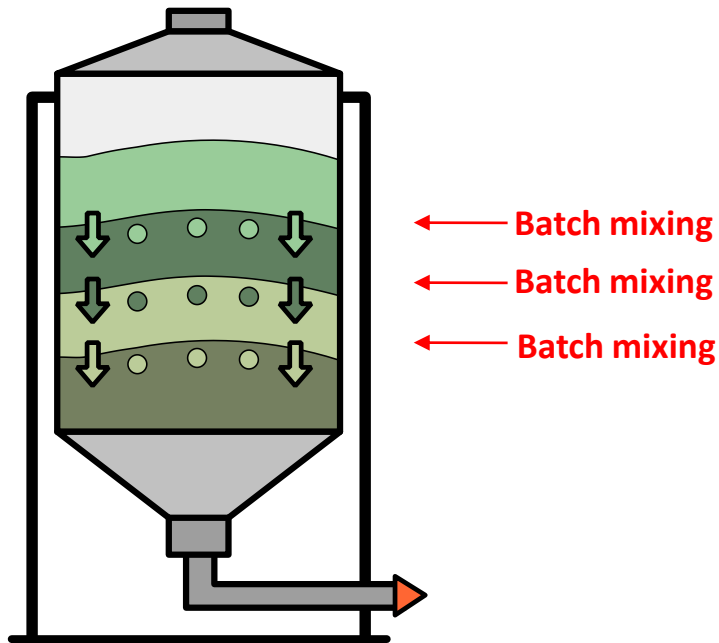
Reception
Reception lot
Variety
Polygon
Parcel
Quantity
Quality and weight

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[-]	[+] Embotellado (22-11-08 09:00:33)	[K]	[X]
[-]	[+] Filtración (15-11-08 15:00:15)	[K]	[X]
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[+]	[+] Labrar (19-05-07 08:30:00)	[K]	[X]
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[+]	[+] Poda (12-02-07 15:31:00)	[K]	[X]

Blending to barrel aging



Important: record what is not what *should be*



Formula example:

@Time = T

Output = 90% Batch A + 10% Batch B

- Probabilistic traceability deals with mixing in containers and tanks
- Apt for continuous processes
- Very precise in its imprecision
- Enables traceability without requiring the emptying of a tank
- Works with cut-off percentages
- But: requires mixing model
 - Dependence on tank geometry
 - Dependence on viscosity
 - ...



- We did process mapping and traceability implementation for a whole series of wineries in Mallorca and elsewhere
- Not two of them have the same process (not even father and son!)
- However, in our implementation, none of them had to change their operational processes
- Combination of identifier based (“digital”) and non-ID based (“analogue”) traceability did the trick
- Flexibility is the key property you want from your traceability system



Conclusions

Internal traceability



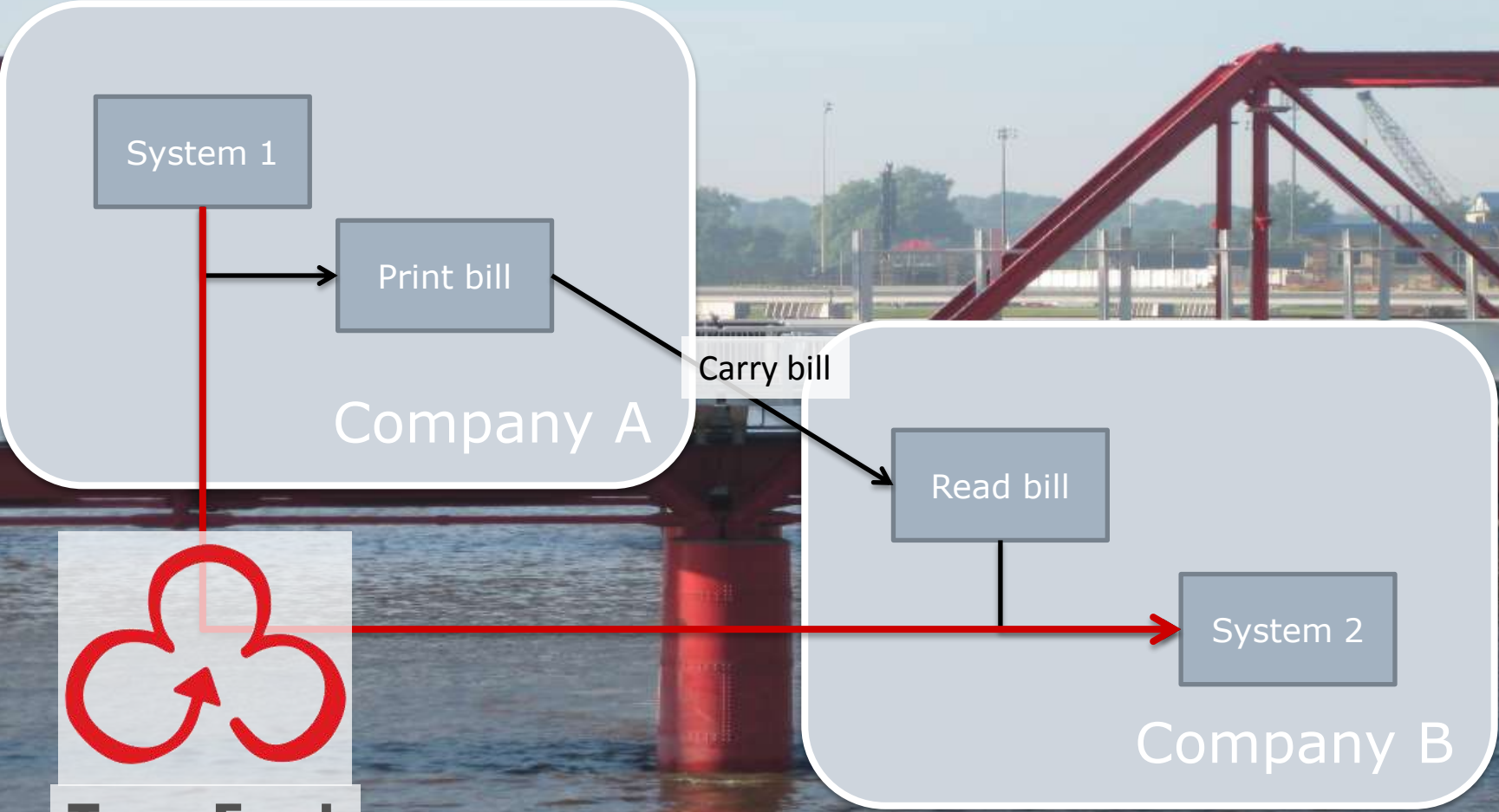
- ❑ Internal traceability is key to achieve benefits
- ❑ Internal traceability can be very complex, but doesn't have to
- ❑ Internal traceability can be very, very flexible
- ❑ Internal traceability must document what you really do, not what you should be doing
- ❑ Without internal traceability, no external traceability



- Improves internal processes
 - Efficiency
 - Theft
 - Stock Management
 - General quality management
 - Quality management (e.g. in silos and tanks)

- Internal traceability is key
 - For understanding your own business (what is, not what should be)
 - For improving your performance
 - For compliance management
 - For establishing external traceability

Now that's all very well, but...





Welcome to Tracing your food!

This page tries to provide you with an introduction into the world of food traceability. Traceability is simple and a legal requirement in some parts of the world, such as the European Union. However, different people think very differently about traceability. We have tried to respect this variety of mindsets by giving a space to each of the different viewpoints about traceability. Whatever is your particular viewpoint, the people behind TraceFood (see Who we are) are trying to make your life easier by providing easy to follow Good Traceability Practices and a standard for exchanging traceability data. You can read more on this website or on our sister website www.tracefood.org.

view video



What is this whole traceability thing?

Traceability is about knowing where a food item is or has been at a particular moment and what has been done to it.

So if you are a yoghurt producer this means knowing where the milk has been and what has been done to it. It also means knowing where the yoghurt has been and what has been done to it. It also means knowing where the yoghurt has been and what has been done to it.

view video



I am a Vegan, can I eat TraceFood?

Well, the short answer is: no.

Food is actually two things: the stuff itself and the information that's available about it. Where it came from, how many food miles it has consumed, whether it's organic, whether it's fair trade, whether it's...

Thank you for your attention!



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