

Transparent, sustainable and cost-effective: the GS1 SMART-Box in manufacturers to retail networks

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Look back

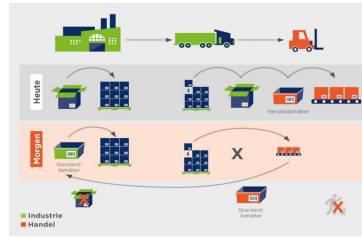
Baseline Situation

- Large diversity in the containers used
- Proprietary box-systems in closed, company-owned cycles
- No returnable cycles between industry and retail



Objective/Motivation

- Optimization of processes and costs
- Savings in material costs
- Better utilization of freight space
- Reducing CO₂ emissions



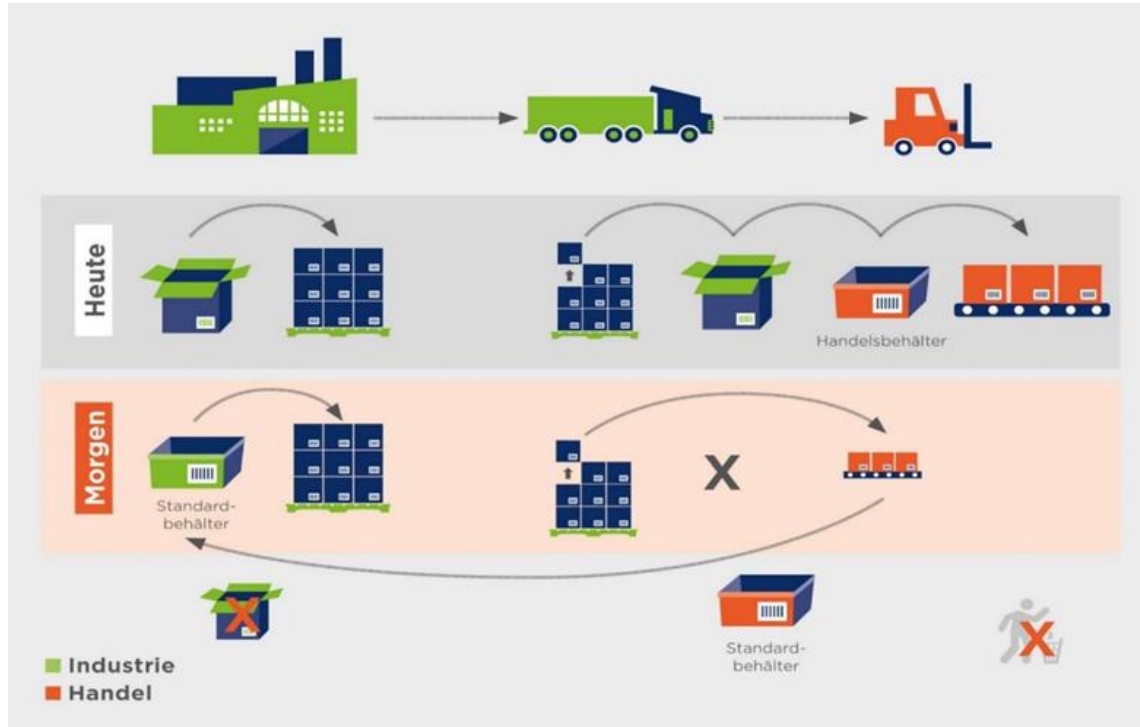
Steps done

- Checking technical feasibility
- Carry out a pilot test
- Process cost analysis at all levels of the supply chain
- Demand planning



What benefits are expected?

business case:
average savings
by 20%



what is meant
by that
concretely?

Business case: optimizing loading capacity



- change from stacked consignments with American boxes to EUL 1/2 consignments with the GS1 SMART-Box
- Reducing pallet space (transport)
- Reducing cost for pallet cycle (estimated av. 3,81€)*
- Reducing administration expenses



*based on a analysis of Fraunhofer IML

Business case: optimizing of processes

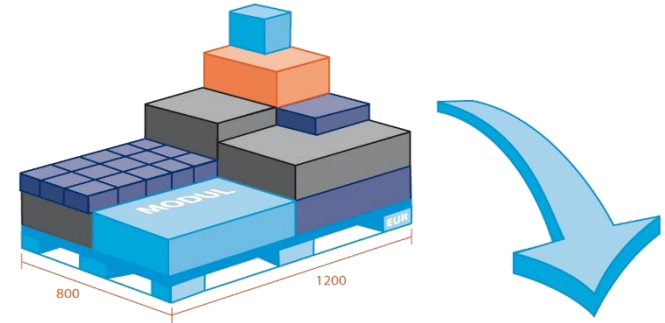


- change from opening the cardboard box, repacking the goods and dispose of packaging material to an optimized flow
- optimized picking process both at the manufacturer (mixed pallets) and the retailer
- saving in material costs



additional potential: increasing the capacity utilization rate

- The GS1 SMART-Box will be available in six different sizes.
 - 600 x 400 mm
 - 300 x 400 mm } **3 different heights**



- the criteria for modularity can be applied to primary packaging as well in the long term

| Grundmaß | Multimodule | Untermaße |
|--------------|----------------|--|
| 600 x 400 mm | 1.200 x 800 mm | 400 x 300 mm 300 x 200 mm 400 x 200 mm 400 x 150 mm 300 x 100 mm |
| | 800 x 600 mm | |
| | | |
| | | |
| | | |

additional potential: savings on foils and labels



- using serialized GRAI for identification instead of a separate article label (GTIN) → SSCC only on pallet
- the serialized GRAI is fixed to the box across all processes
- the removal of the label is not necessary after each circulation and thus reduces the pooling costs

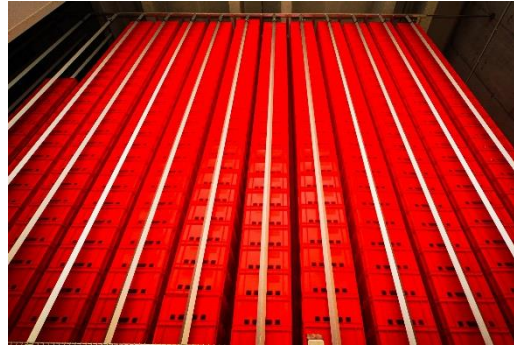


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additional potential: further steps of optimizing processes



optimization of
the order delivery
process → mixed
pallets



storage in SMART-
Boxes instead of on
pallets



using the SMART-
Box for delivery
to the point of
sale

Ensure implementation



- Defining the set of GS1 SMART-Boxes
- Designing returnable cycles
- Creating demand planning
- Achieving commitment between stakeholders

GS1 SMART-Box



→ The label is supplemented by RFID right from the start

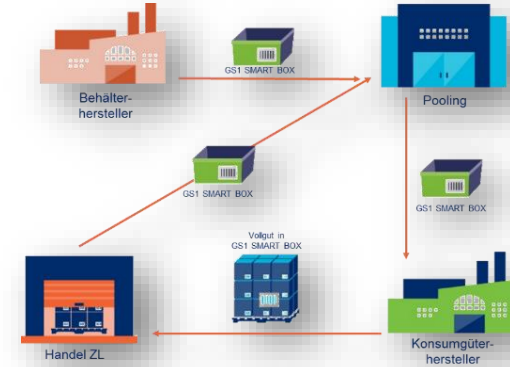
- 6 different sizes (based on 600x400 and 300x400 mm)
- Process requirements
 - fit to the conveyor system
 - Shutter for easier picking process
 - Nap field for easier removal of labels
- GS1 identification standards
 - Serialized GRAI for asset type and version
 - Left-/right-identification (shutter)
- Compliance with VdS* fire protection requirements

* VdS is an independent institution which has been ensuring safety and trust in the fields of fire protection and security

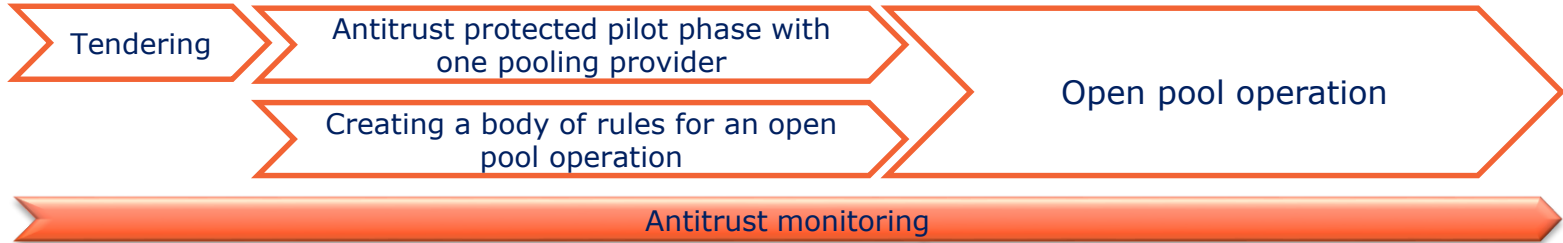
Designing returnable cycles

Aspiration:

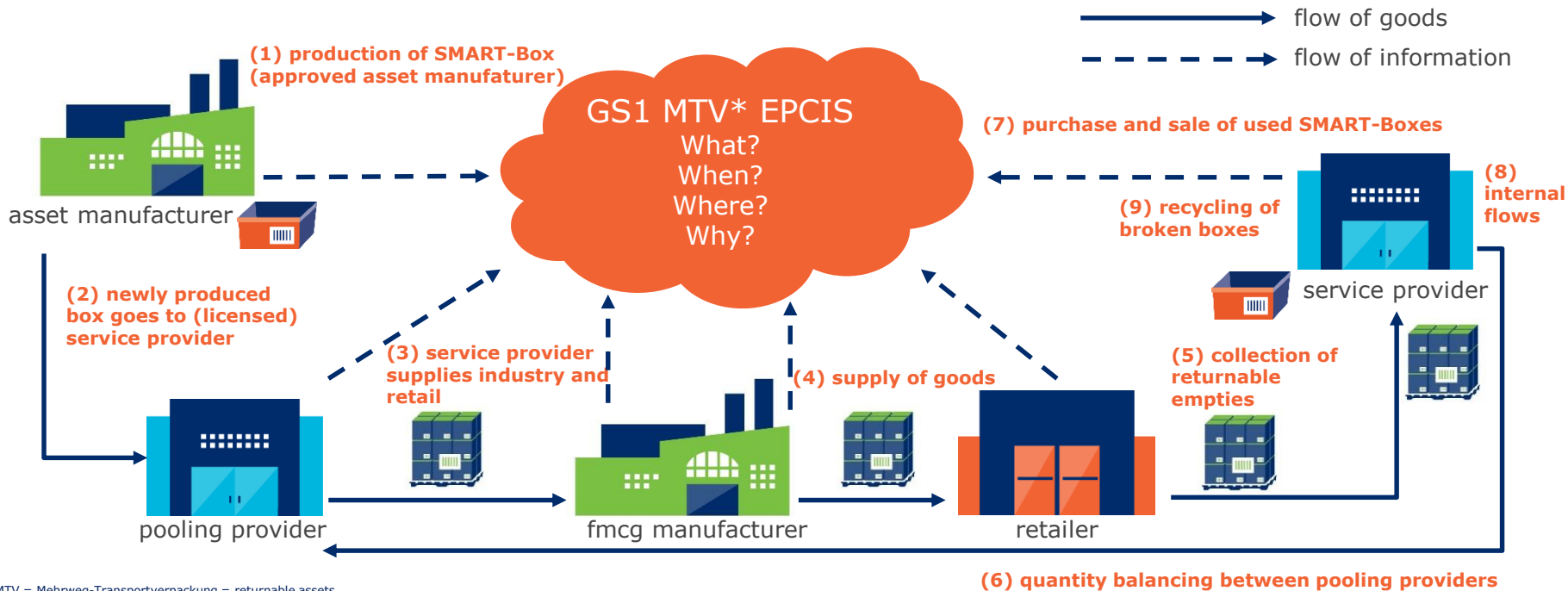
- ✓ Low complexity for implementation
- ✓ High standards of quality assurance
- ✓ No sorting effort in the supply chain
- ✓ Maximum service at low costs
- ✓ High availability of SMART-Boxes even at seasonal peaks
- ✓ Interoperability by using a standard
- ✓ High competition between pooling providers



Approach:

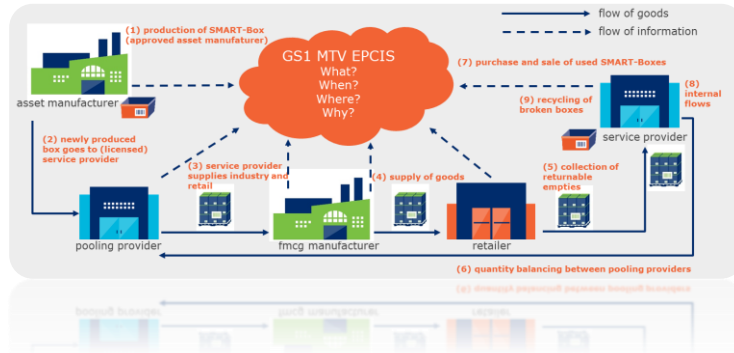


Development of an innovative circular economy



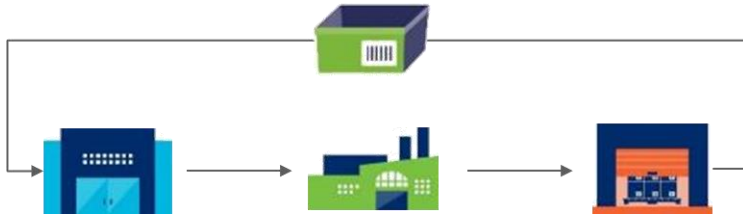
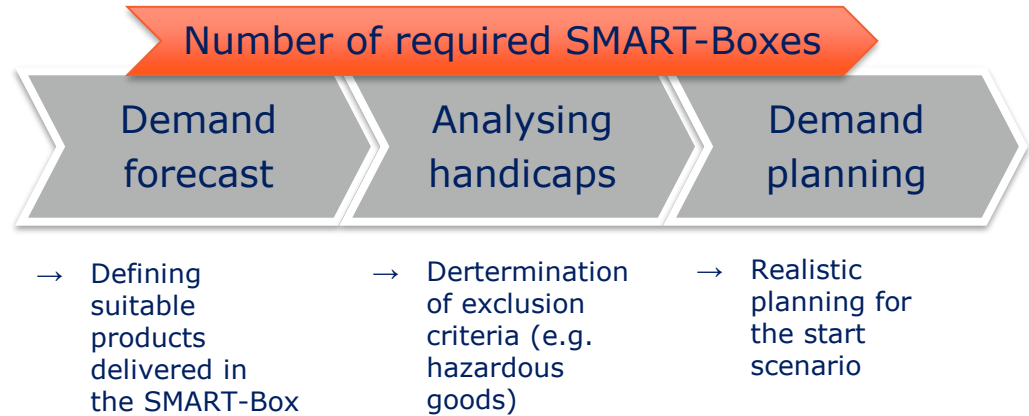
*MTV = Mehrweg-Transportverpackung = returnable assets

Basis for a completely transparent system



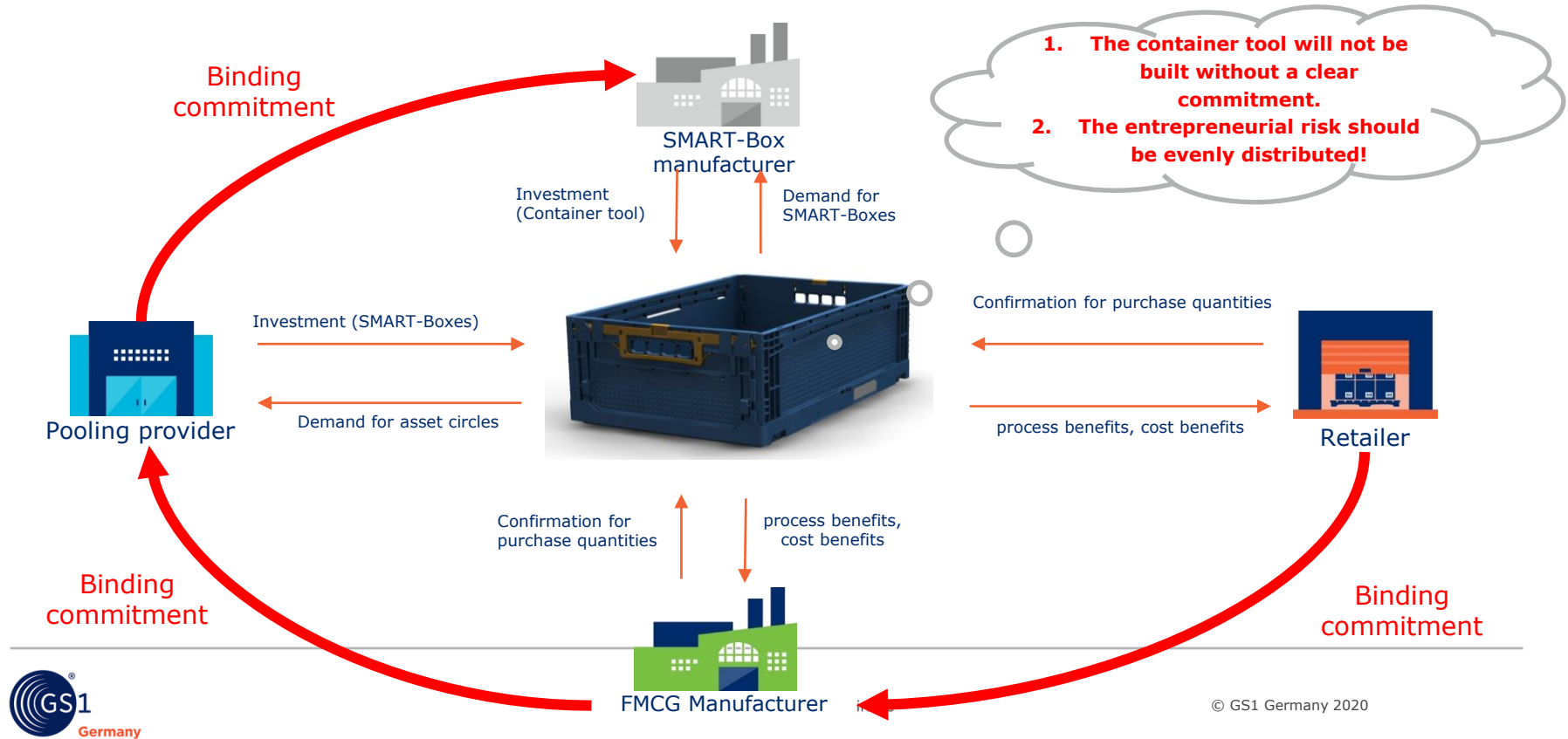
- combines the advantages of closed and open pool systems
- the life cycle of each load carrier can be traced from its production "birth" to its utilization "death"
- plagiarism will be identified soon and grey markets will be dissolved as early as the development phase

Creating demand planning

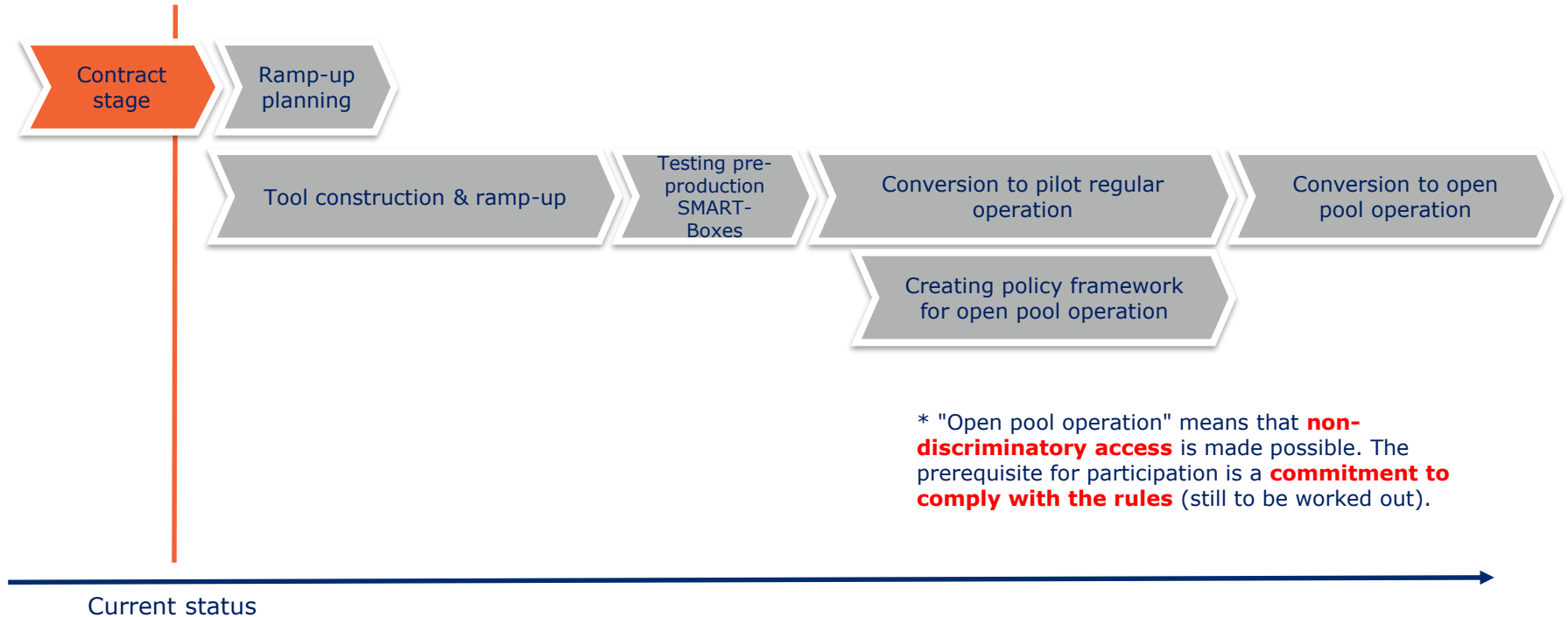


→ The frequency of the asset circles also determines the number of SMART-Boxes required.

Achieving commitment between stakeholders

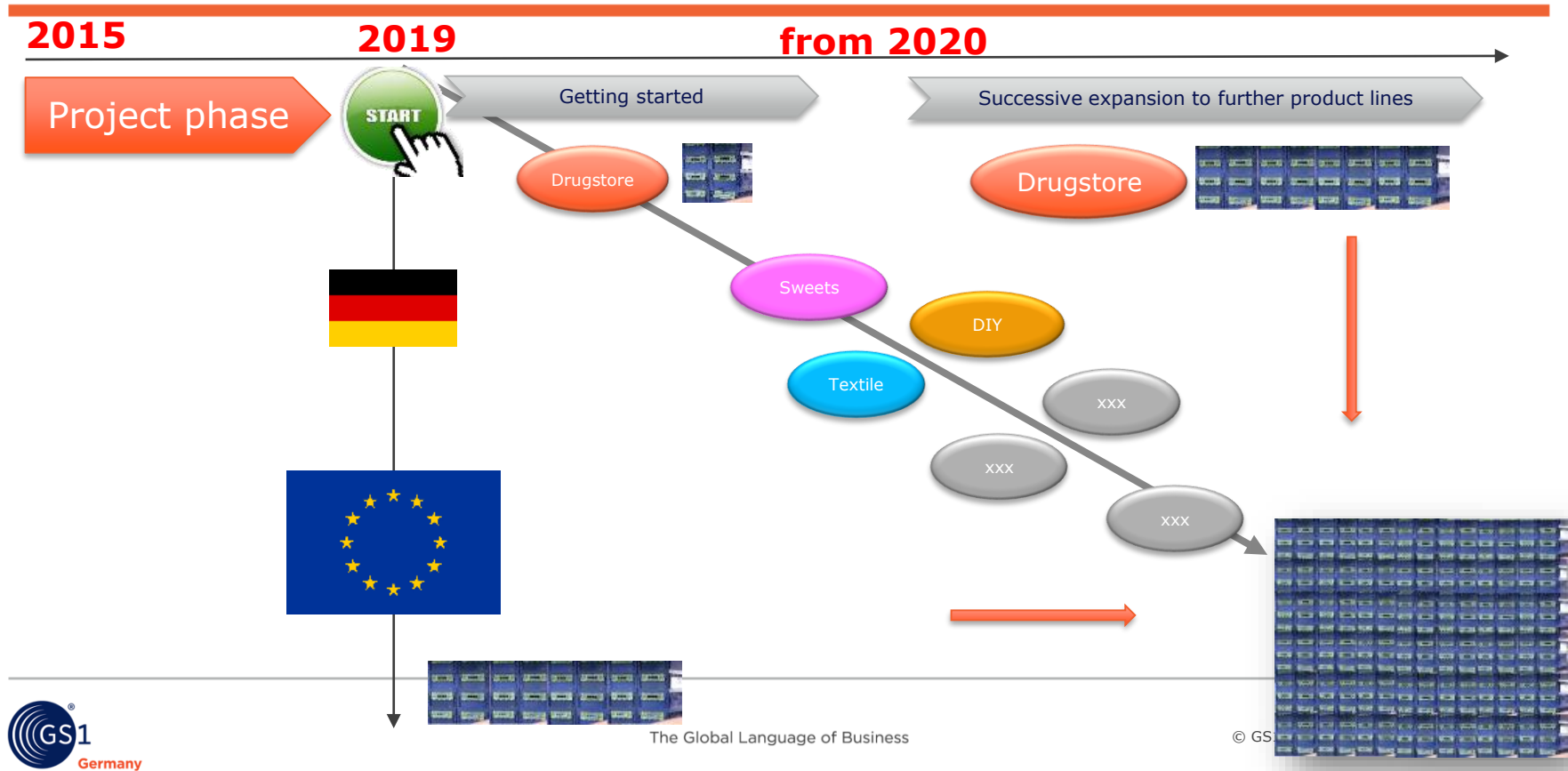


Planning based on contract conclusion



* "Open pool operation" means that **non-discriminatory access** is made possible. The prerequisite for participation is a **commitment to comply with the rules** (still to be worked out).

We expect big things



We believe in it!

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THANK YOU

¡GRACIAS

GRAZIE

고맙습니다

OBRIGADO!

Teşekkürler

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DANKE



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