CIRCULAR SYSTEM
CONTAINER GLASS

Photo by Schirmbeck GmbH

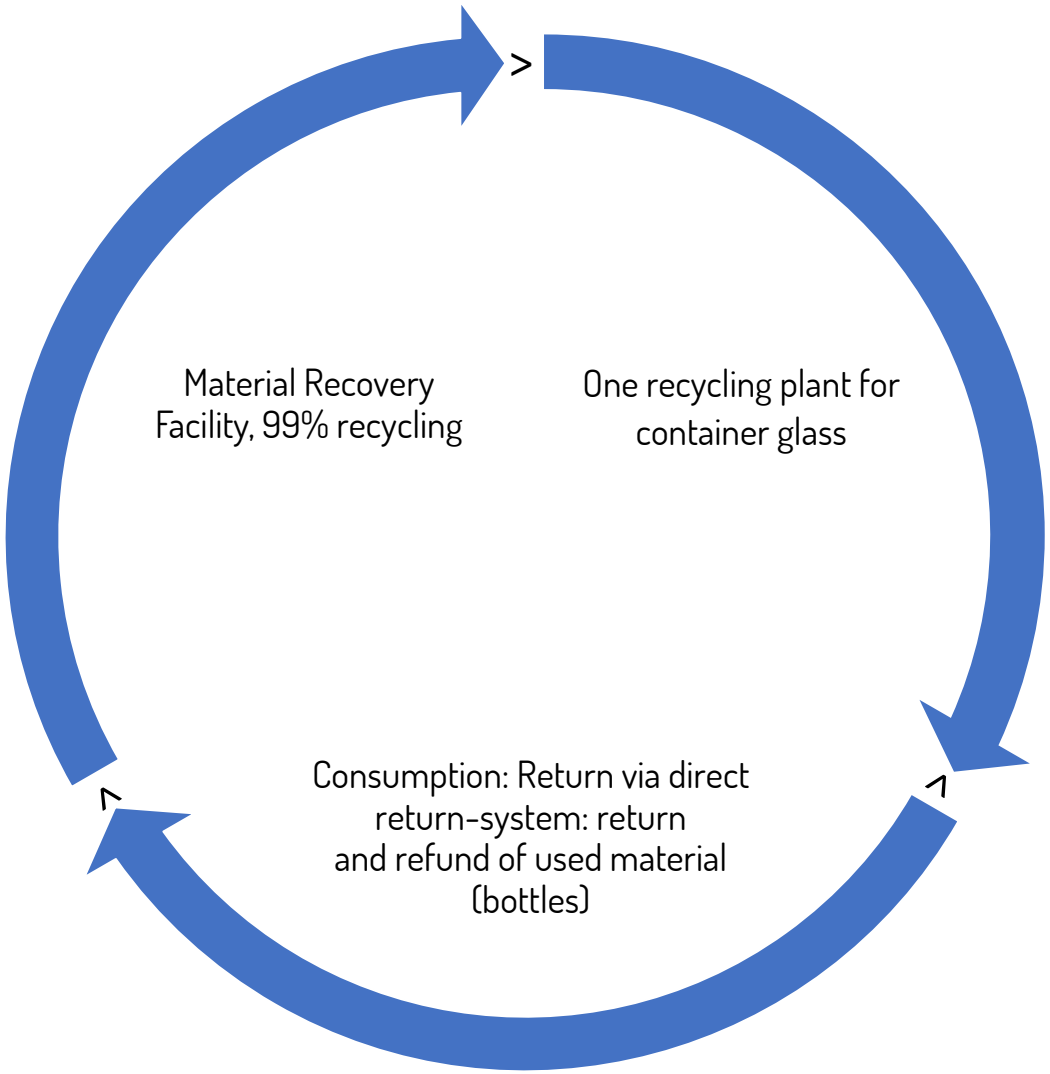
Container Glass, Sweden – Circular System Characteristics

System characteristics:
With the highest recycling rate of 99% for container glass, the Swedes have evolved a highly effective circular system. Recycling has food grade quality and enables reverse vending for bottle-to-bottle, brand-to-brand and jar-to-jar production. With over 5000 collection points a service system has evolved which is based on producer responsibility principles.

Availability/Role of recycling technology:
- Sorting machines and processing technology are of the highest standard.

Maturity of market:
- Monopolistic market structure: Swedish Glass Recycling (Svensk Glasåtervinning AB) is the only reprocessing plant for recycled glass in Sweden and world leading when it comes to collecting and recycling used and graded glass containers.
- Svensk Glasåtervinning AB was also given the responsibility by the producers, which are the owners of the company, to develop a collection system and a recycling plant (the only one in Sweden).

Policy intervention type/regulations/directives:
- **Littering prompted** the Swedish government to mandate a deposit return system for cans in 1984 and for PET bottles in **1994.**
- In 1994, the Swedish Parliament passed a law **on producer liability for packaging:** As a producer or importer of glass containers you need to pay a fee for the collecting and recycling of glass.



Source: FERVER, UNEP 2019, Elsner 2016, Wuppertal Institut 2020, FEVE 2015, Svensk Glas Atervinning, Friends of Glass 2020, European Parlament, Harder 2018

SWOT Container Glass

Strength

1. Closed loop
2. Technical cycle, C2C
3. Energy- and resource efficient
4. Food grade quality
5. Compliance for Circular Economy
6. High acceptance

Weakness

1. Illegal sand extraction from nature protected areas

Opportunity

1. Glass packaging market grows (average 7 %)
2. On average, there is still high potential for glass recycling in Europe (50 %) and worldwide (80 %)

Threat

1. Sand, meeting the chemical and physical requirements of the glass industry, makes up less than 1% of the sand extracted yearly

Source: FERVER, UNEP 2019, Elsner 2016, Wuppertal Institut 2020

1. Nature Science

The first glass was formed in volcanoes, people made glass for the first time in 5000 BC.

Photo by Sara Codair on Unsplash

2. Envisioning

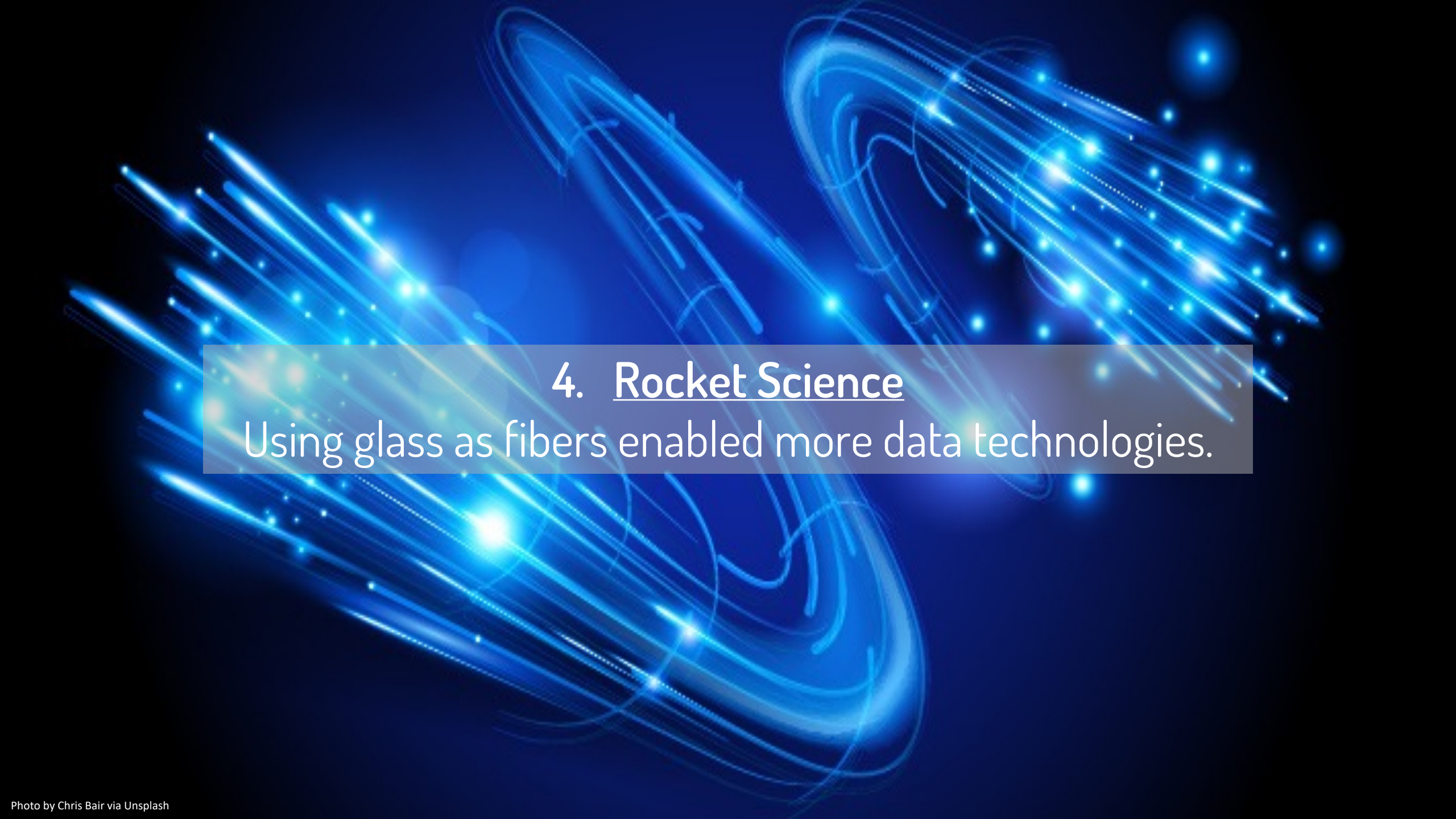
Glass development in the roman empire was reserved for the church and the nobles for a long time .

Photo by Héctor J. Rivas on Unsplash

3. Investment

As glass can be used in many ways, investments in research and development promised technical innovation.

Photo by Don Shin on Unsplash



4. Rocket Science

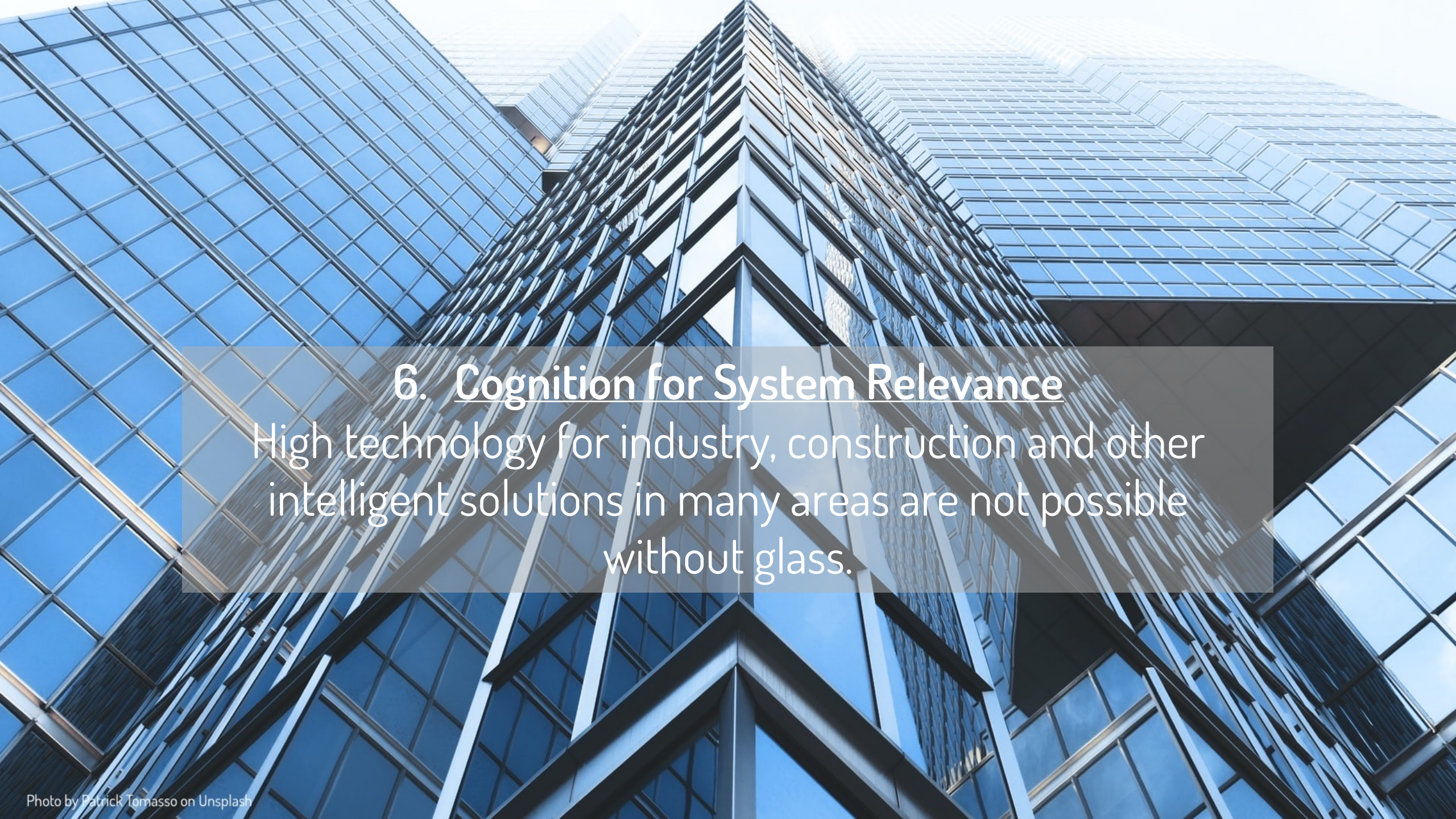
Using glass as fibers enabled more data technologies.

Photo by Chris Bair via Unsplash

5. Historic Event

Though sand appears to be an infinite raw material, specific sands used for glass making are scarce. Sweden belongs to the TOP 10 sand producers in the European Union. However, deliveries of sand and gravel from natural deposits have decreased by almost 50 million tons over the last twenty years in Sweden.

Photo by imago



6. Cognition for System Relevance

High technology for industry, construction and other intelligent solutions in many areas are not possible without glass.

Photo by Patrick Tomasso on Unsplash

Photo via schweden.net

Photo by vetropack Switzerland

7. Technical Innovation

Its all about sorting. Today, up to 90% clean waste glass can be reused. The goal is 100%

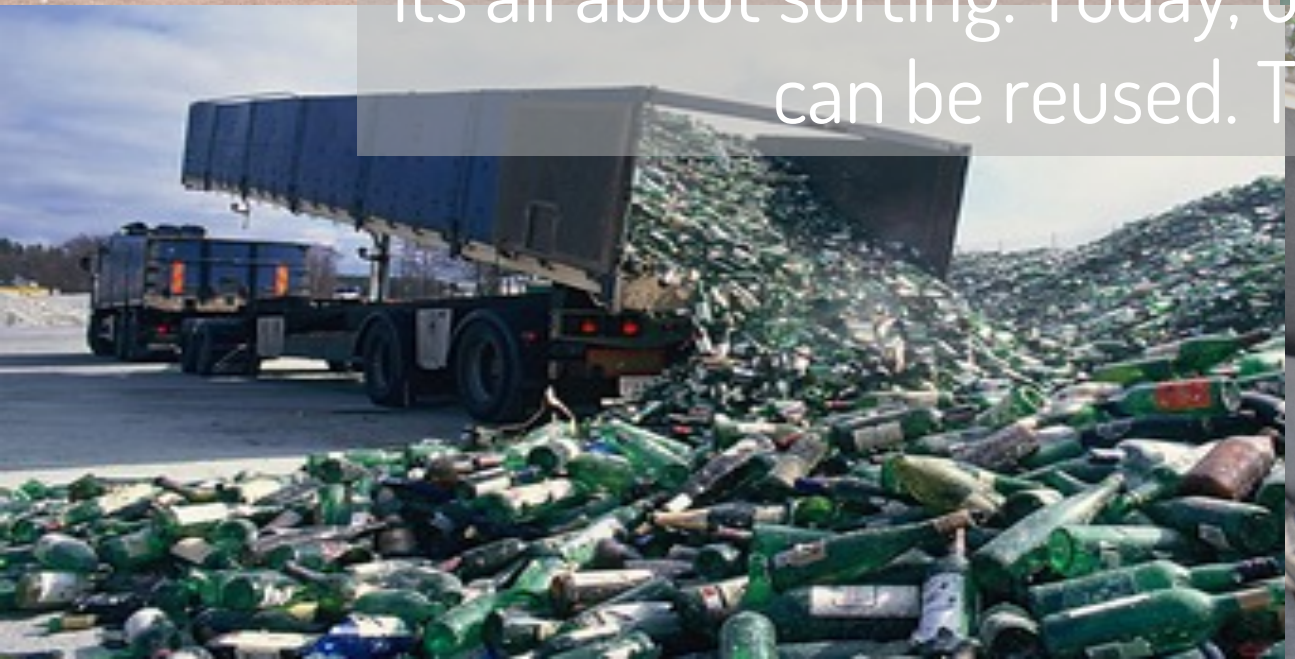


Photo by Sesotec

Food Packaging Forum

Glass Alliance Europe

FEVE

glass packaging institute

BV GLAS

AIGMF CELEBRATING 75 YEARS THE ALL INDIA GLASS MANUFACTURERS FEDERATION

The European Glass Packaging Federation

8. Business Innovation

A network of players is managing the system.

FERVER

European Federation of Glass Recyclers

suez

GLASS RECYCLING COALITION

ALBA Group the recycling company

the Glass Recycling Co.

9. Life Cycle

System has evolved. Technical cycle is working.

10. Forecast

The Europe glass packaging market size was valued at USD 19.24 billion in 2019 and is projected to reach USD 22.01 billion by 2027.

Foto: Studio-Fritz / Pixabay

Photo by Cottonbro via Pexels

Society

Organization

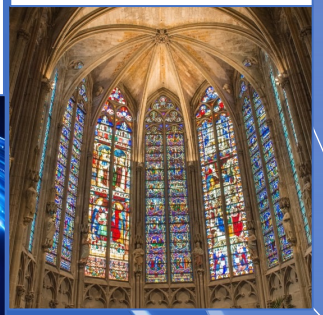
Individuum

7. Handling Diversity

8. Business Innovation

6. Cognition for System Relevance

2. Vision



3. Investment

9. LCA

5. Historic Event

4. Rocket Science

1. Discovery

10. Foresight

Container glass cycle, Sweden – product system evolvement

Thank you for your attention

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