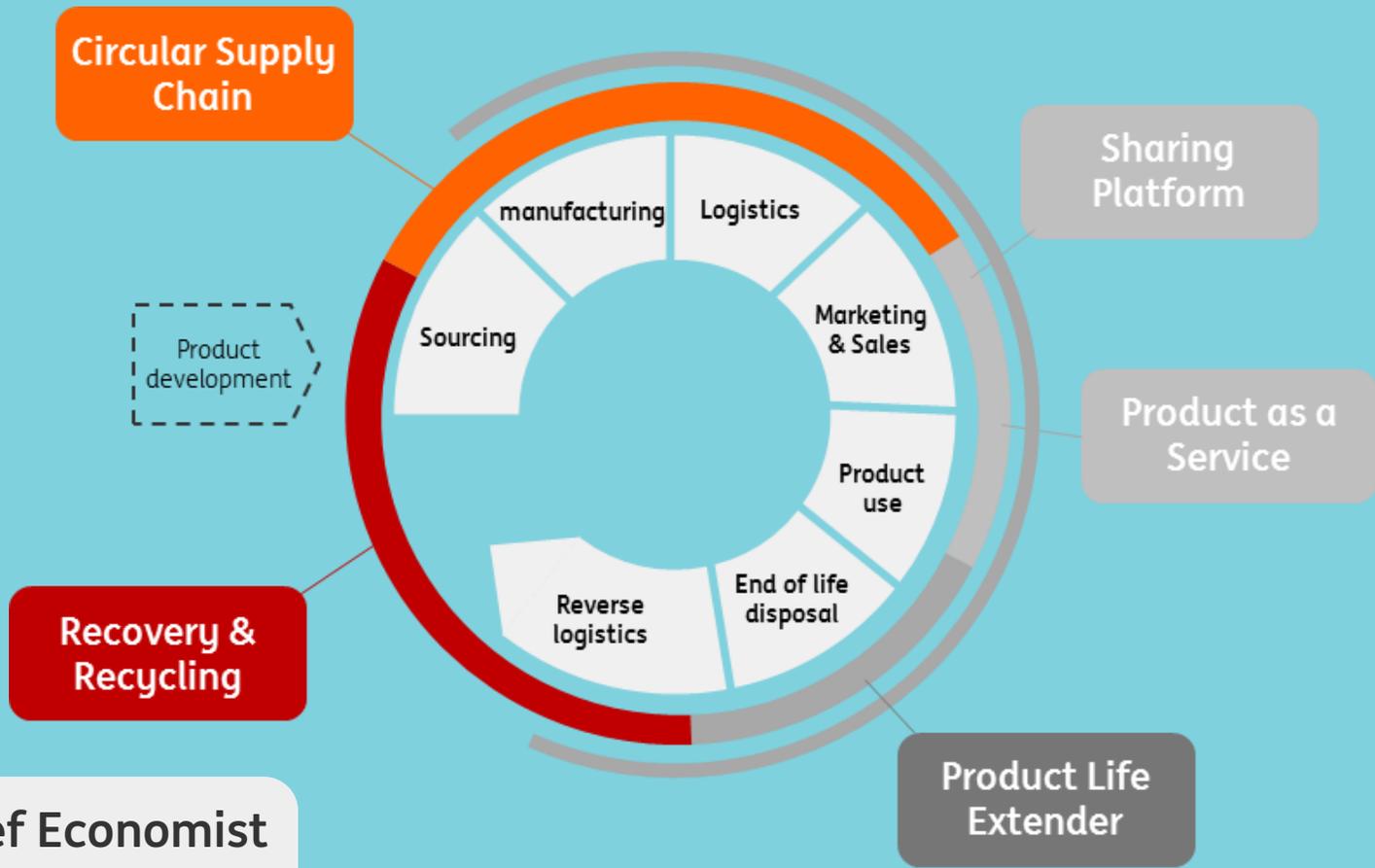


The move to a Circular Economy

eMail mark.cliffe@ing.com
Website www.markcliffe.com
Follow me @MarkCliffe



Mark Cliffe, ING Group Chief Economist
Financial Services Forum, London
24th January 2019

Source: Accenture

thinkforward



Financing the circular economy

Increased collaboration and complexity requires new approaches

1. **Circular business models** require multiple forms of capital from loans, bonds, equity to P2P
2. **Cash flow lengthening needs optimisation** to make circular business more financeable
3. **Contracts** become pivotal in financing circular business cases
4. **Creditworthiness needs more attention** as pay per use may attract less creditworthy users
5. **Value creation in second hand markets** can increase financeability
6. **Design for disassembly** can increase the residual value of products
7. **Supply chain finance** unlocks untapped financial resources
8. **Integrated solutions** are called for to deal with increased collaboration and complexity

Appetite for circular finance is growing, but still limited...

Big corporates rely more on internal funds, startups on equity and P2P

Regular products	'Regular' Loans Lease Supply Chain Finance	<ul style="list-style-type: none">• Defining 'circular companies' and 'circular projects'• Raising awareness• Finance of circular related activities
Link to 'green products'	Green Bond Green Loan Sustainable Improvement Loan	<ul style="list-style-type: none">• Use of proceeds for circular activities• Sustainable KPIs linked loan. KPIs related to Circular targets or improvement
Business Model Development	Product-as-a-Service Sharing platforms	<ul style="list-style-type: none">• Tailor made solutions• Develop business cases and funding sources, eg. Circular Supply Chain Accelerator (Cisca)

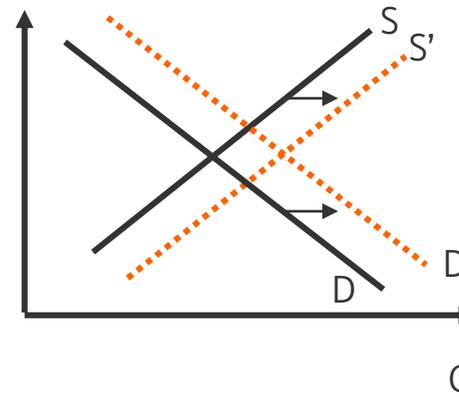
Will market forces alone drive the Circular Economy?

Six challenges facing circular business

Demand

1. Consumer demand – limited appetite to pay P for circularity, esp. in emerging markets
2. Counter trends: Cult of convenience... 'fast fashion', same day delivery
3. CSR investor pressure – can investors get higher returns from circularity?

From ECON 101...



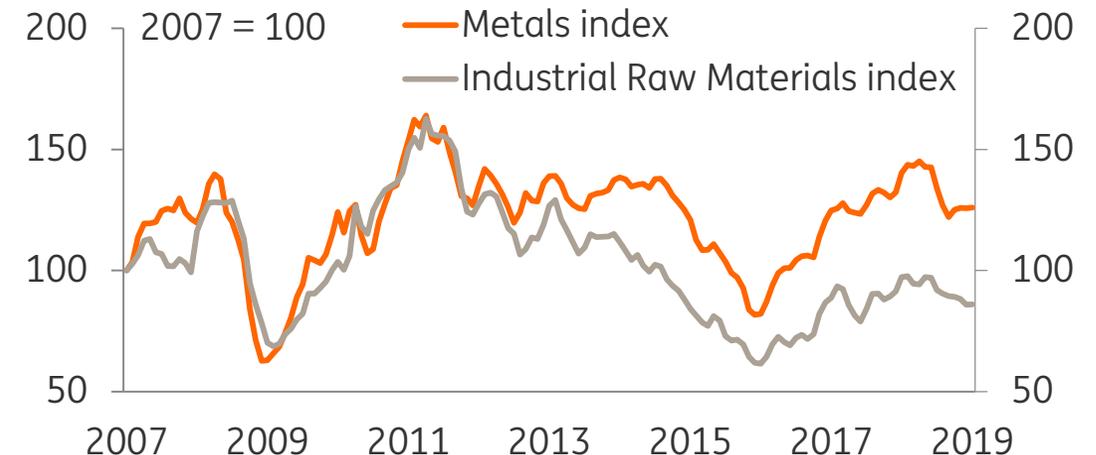
Would you pay more to go green?

70% of consumers said they would pay 5% more for green products assuming they meet the same performance standards, but less than 10% would pay 25% more. Source: McKinsey

Supply

1. Costs – virgin raw materials are cheaper
2. Culture – business need to rethink their models and collaborate
3. Creativity – innovation needed to make circularity economic

Price developments of Metals and Raw Materials



How policy can catalyse change

1. Taxes and subsidies

- Use market mechanisms to incentivise change
- Energy taxes – ‘gilets jaunes’ shows need for holistic reform, e.g. ‘carbon tax and dividend’ plan which compensates the poor
- Plastic bag tax triggers big behaviour changes
- R&D and investment support

2. Rules and Regulations

- Definitions, standards, labels, targets and measurement are key
- Rules on waste and recycling, reuse, product life extension
- Support from public investment and procurement
- International collaboration and trade

Catalyst: societal pressure



Appendix – Finance and the circular economy

The clear need for sustainable business

Environmental challenges require businesses to act

Climate change

“It takes communities, cities, states, industry, business and everyday people...”



- **Melting of ice** and the **rising of the seas** results in flooding and erosion of coastal and low lying areas
- **Extreme weather** causing floods and decreasing water quality
- Globally effecting **all regions**, both rural and urban
- Introducing risks for **human health, society, economy and wildlife**

... to transform high-level decisions into real-world action”

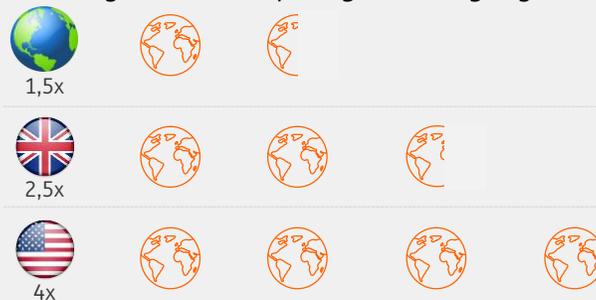
– Patricia Espinosa, UNFCCC Executive Secretary, COP23

Resource scarcity

By 2050, the global population is expected to reach 9 billion — ...



Current resource consumption compared to the earth's regenerative capacity differs by region



... increasing pressure not only on Earth's natural resources, but also on many of the world's most environmentally sensitive regions

– WWF, 2017

Water distress

If no changes are made, ...



- Projected 2% annual **demand growth** for freshwater will lead to serious constraints
- **One out of two countries** is prone to water stress
- Flood-prone zones need **better protection**

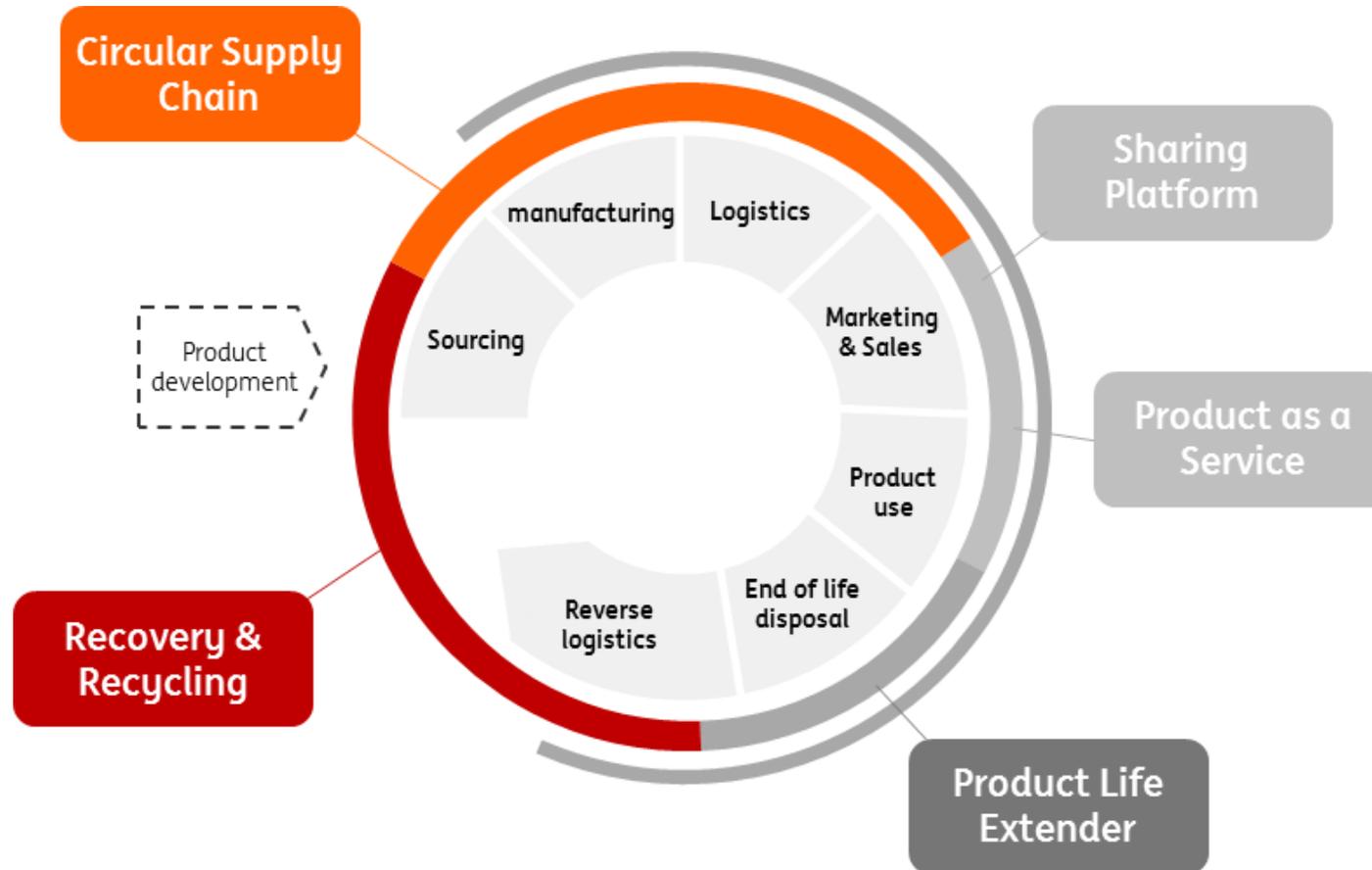
...global water demand is forecasted to outpace the sustainable water supply in 2040 by 35%...

– ING, 2017

Five Circular Economy Business Models | Explanation

Circular supplies	<ul style="list-style-type: none">• Provide fully renewable, recyclable or biodegradable materials
Resource recovery	<ul style="list-style-type: none">• Recover embedded value or useful resources/energy out of disposed products• Adopt Cradle-to-Cradle (CtC) designs where disposed products can be reprocessed
Product life extension	<p>Extend the total lifecycle of products and assets</p> <ul style="list-style-type: none">• Reduce wastage of materials by adopting the following strategies:<ul style="list-style-type: none">• Resell the products and assets to another user• Repair / Upgrade the products and assets• Remanufacture the products and assets• Generate additional revenue from extended use of products
Sharing platforms	<ul style="list-style-type: none">• Promote a platform for collaboration among product users• Facilitate the sharing of overcapacity or underutilization• Maximise utilization, benefitting companies whose products have low utilization or ownership
Products as a service (PaaS)	<ul style="list-style-type: none">• Provide alternative to “buy and own” model by introducing lease or pay-for-use• Shift business focus from volume to performance by increasing upgradability and durability• Reduce costs and cannibalization risks stemming from longevity, reusability and sharing

Five Circular Economy Business Models



Source: Accenture

Multiple forms of capital to finance circular business models

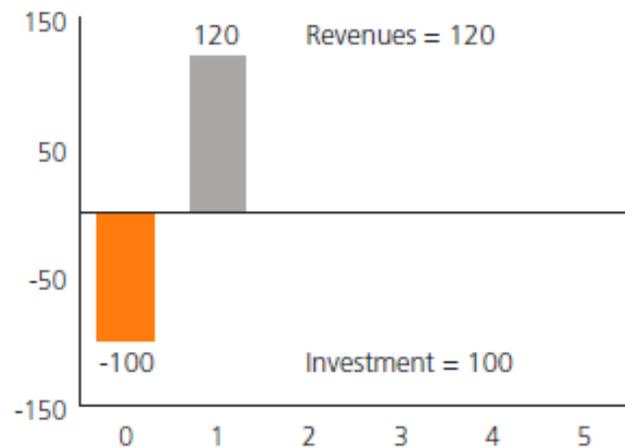
Need to finance circular business models

Bank finance	Corporate debt	Traditional corporate lending to finance circular businesses with guarantees at corporate level.
	Lease	Can fit pay per use earning models. Applicable to clients that are creditworthy and products with predictable residual values in second hand markets.
	Factoring & supply chain Finance	Can solve the prefinancing issue of pay per use earning models by selling uncertain future cash flows to a financial institution.
	Structured finance	Can be a financing option for large stand alone circular projects
	Balance sheet reduction through off balance finance	Can solve the issue of balance sheet extension.
Capital Markets	Equity finance: Initial Public Offering	Valuable sources of finance for mostly larger and mature circular businesses that meet the scale and requirements of the capital markets.
	Debt finance: Green Bonds	
Foundations and Impact investors		Most circular businesses are still at their pilot stage, are not profitable yet or are lacking a track record. Non-commercial finance can bridge the gap from pilot stage to growth stage as they are less concerned with being fully compensated for the financial risk.
Venture Capital, Private equity, Family Offices		Finance source for the many startup businesses in the circular economy. However, their requirement for high growth and relatively fast payback horizons might limit suitability for circular businesses.
Near banks like Google, Apple, Amazon, etc		Offer new payment facilities and possibly working capital solutions.
Crowd funding	Peer2Peer lending	Finance source for circular businesses that involve the (local) community or those based upon ideas that appeal to the crowd.
	Equity investment	

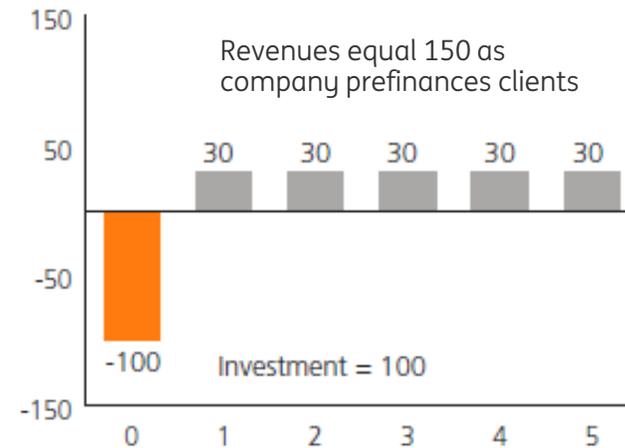
Pay-per-use requires more emphasis on cash flow timing

- Pay per use models transforms the company cash flows...
- ...producers as one-off sales are replaced by contracted cash flows
- The focus shifts from asset values to the timing of cash flows
- Contracts that shorten the pay back period boost returns (see 3. vs. 2)

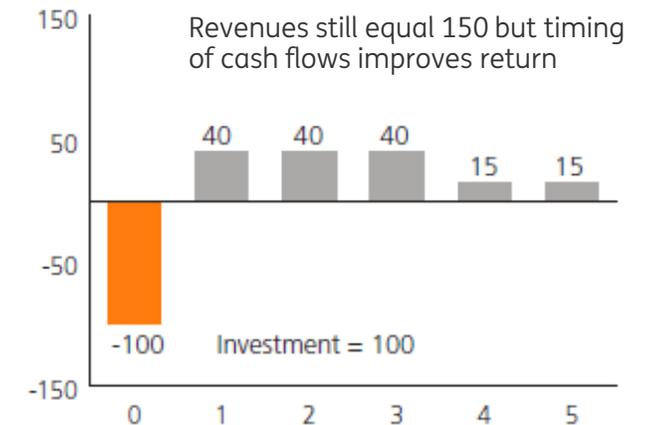
1. Direct sales model



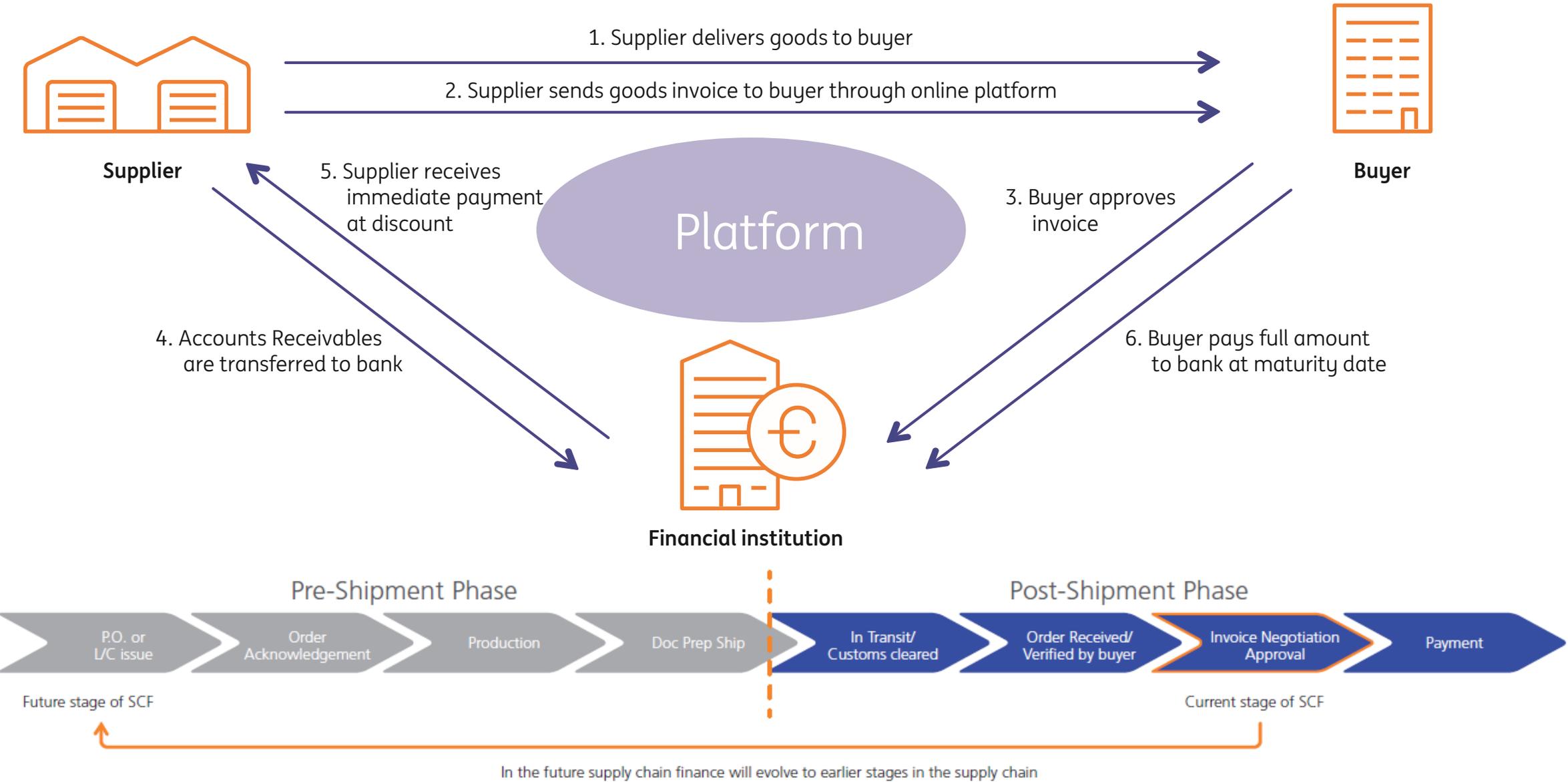
2. Pay per use



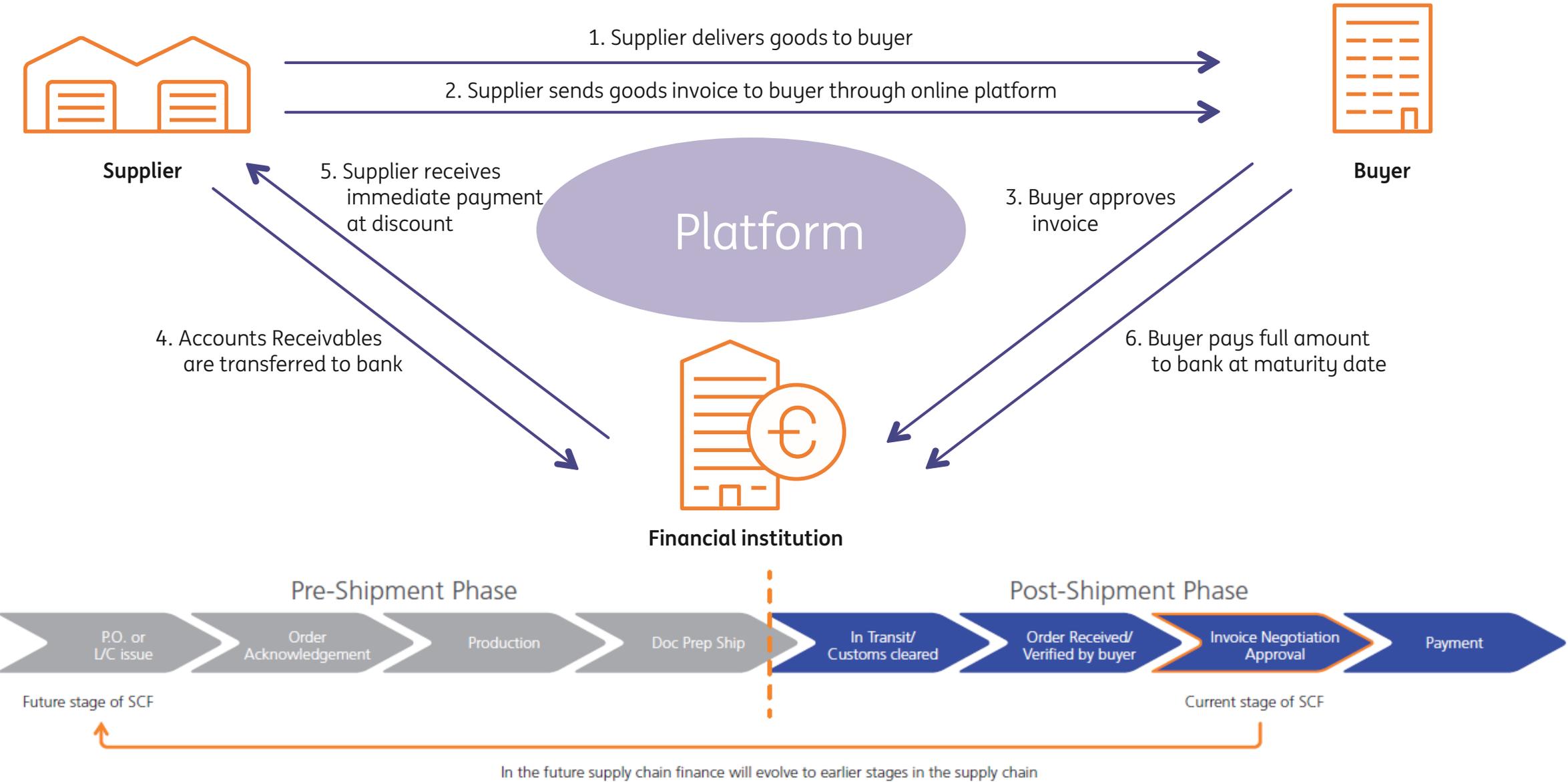
3. Shortening the pay back period



Supply chain finance can facilitate circularity of supply chains



Supply chain finance can facilitate circularity of supply chains



“USD: Making everyone (else) great again!”

“When caution’s not enough for the euro”

“What we really think of the Bank of England’s rate decision”

“Some Brexit clarity at last?”

“Riding the cryptocoaster”

“Normalisation will be a long, uncomfortable journey”

“Trade war: What is it good for?”

“G10 FX: Careless Central Bank Whispers”

“Trump: The next 100 days”

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