



# Digital Circular Economy

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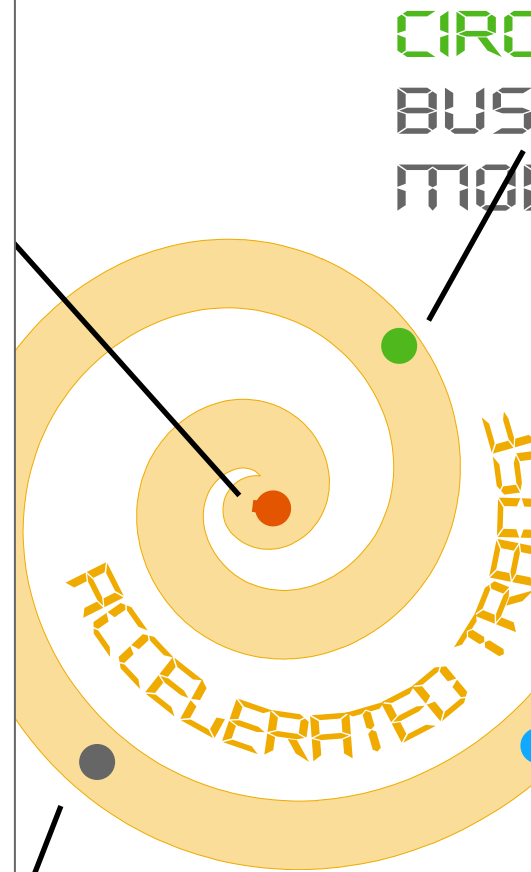
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# DIGITAL CIRCULAR ECONOMY BUSINESS MODEL TOOLKIT

ENABLE OR ENHANCE ALL OTHER BUSINESS MODELS. SUCH ENABLING MODELS ARE INDEPENDENT OF THE MATERIALS FLOW PHILOSOPHY IN THEIR NATURE.

- PRODUCT AS A SERVICE  
(SERVICE- AND FUNCTION-BASED  
BUSINESS MODELS, DEVICE LEASING  
SERVICES)
- VENDOR LOCK-IN
- LOCAL LOOP/LOCAL  
CONSUMPTION
- MODULARITY/SEPARATION OF  
CONCERNS
- PERSONALIZATION/USER-  
ORIENTED PRODUCTS
- COLLABORATIVE CONSUMPTION  
SHARECONOMY
- FINANCIAL OPTIMIZATION  
LEVERAGES FINANCIAL MECHANISMS  
TO OPTIMIZE THE COMPLETE PRODUCT  
LIFE CYCLE
- **GREEN-WASHING/GREEN-**



CHANGE OTHER BUSINESS MODELS THROUGH TECHNOLOGY INNOVATIONS. THE FUNDAMENTALLY INCREASING EFFICIENCY CAN MAKE CLASSIC WAYS OF OPERATION UNPROFITABLE.

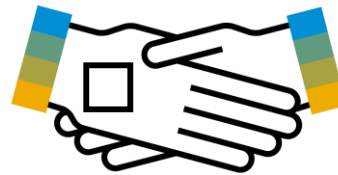
- **INTERNET OF THINGS (IOT) AND SMART ASSETS** HARNESS ASSETS AND THE IOT TO DRIVE REAL-TIME INSIGHTS AND NEW, INNOVATIVE, AND "INTELLIGENT" SERVICES
- **CUSTOMER/CITIZEN EXPERIENCE** **OMNICHANNEL** AIMS AT AN OUTCOME-BASED CUSTOMER/CITIZEN EXPERIENCE
- **WORKFORCE ENGAGEMENT** FOCUSES ON SMARTER AND ENGAGED WORKFORCE ACROSS ALL EMPLOYEES AND CONTRACTORS
- **SUPPLIER COLLABORATION AND BUSINESS NETWORKS** LEVERAGE NEW DIGITAL ALTERNATIVES FOR BUSINESS COLLABORATION
- **SIMPLIFIED AND INNOVATIVE**

**DIGITAL CORE TRANSFORMATIVE INNOVATIVE PLATFORM FOR CORE BUSINESS PROCESSES**

# Accelerate the **Circular Economy** with new **Digital Technologies!**



**New  
Digital  
Transformation  
Technology**



**Business  
Processes**

(objective: disrupt today's  
business processes)

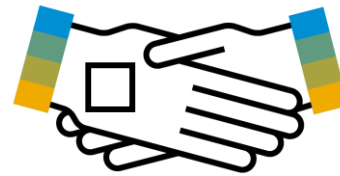


**New  
Circular Economy  
Business Models**

# Accelerate the **Circular Economy** | **Smart Bins** (Internet of Things)



**New**  
**Internet of Things**  
**(IoT) for Waste**  
**Containers/ Bins**  
(Smart Bins)



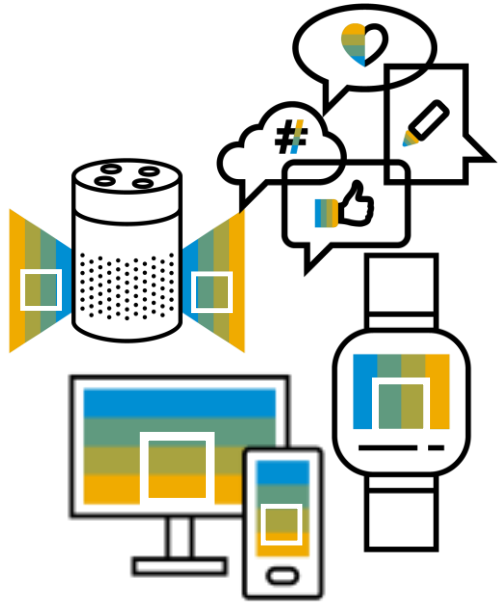
**+**  
**Business**  
**Processes for Waste**  
**Transportation and**  
**Disposal**



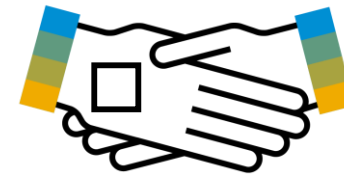
**+**  
**New**  
**Circular Economy**  
**Business Models**

**Innovation: pay-per-use, logistics optimization, ...**

# Accelerate the **Circular Economy** | Omnichannel **Citizen Engagement**



**New**  
**Omnichannel**  
**Citizen/Customer**  
**Experience**



**Business**  
**Processes**

(disrupt today's  
business processes)

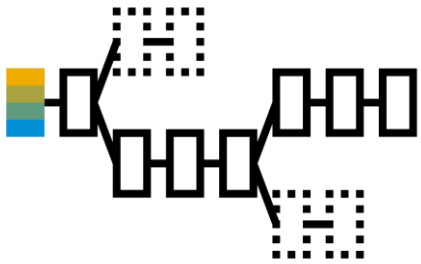


**New**  
**Circular Economy**  
**Business Models**

**Innovation: reduced waste, better separation,...**



# Accelerate the **Circular Economy** | **Blockchain** for Transparency & Trust

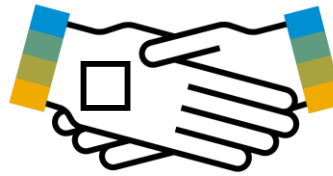


**New  
Blockchain  
Technology**

(Distributed  
Ledger  
Technology)



**Business  
Processes for  
Waste Transport  
and Disposal**



**New  
Circular Economy  
Business Models**



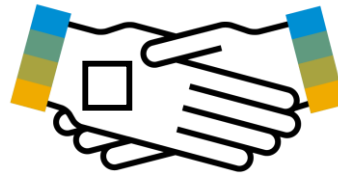
**Innovation: fraud prevention, process optimization,  
improvement of environmental performance**

# Accelerate the **Circular Economy** | **Digital Core** (ERP)



**Innovative and  
Intelligent ERP**

(Digital Core with  
embedded analytics,  
digital boardroom, etc. )



**Business  
Processes**



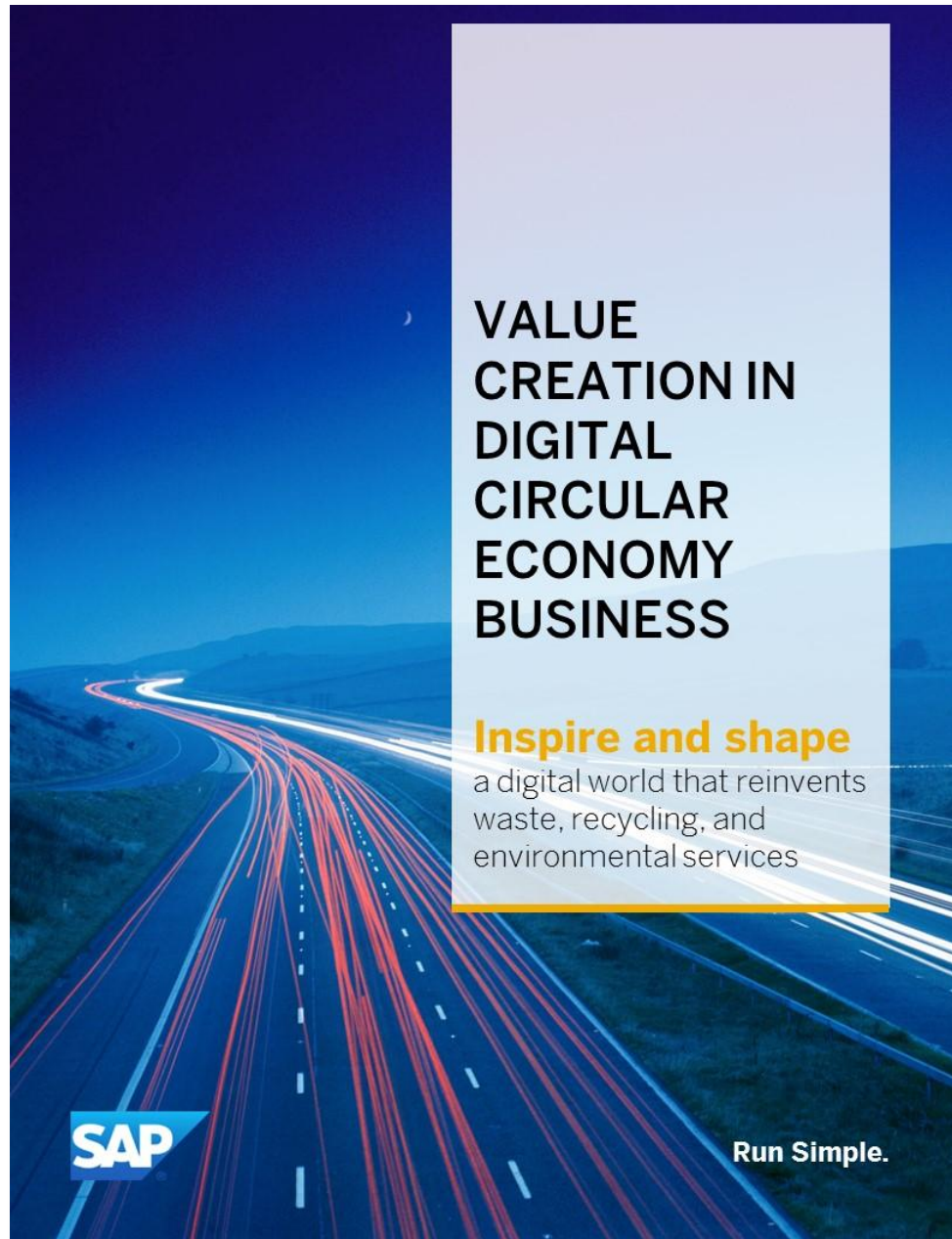
**New  
Circular Economy  
Business Models**

**Innovation: insight-to-action in real-time**



# Accelerate the Circular Economy | Digital Core (ERP)





# VALUE CREATION IN DIGITAL CIRCULAR ECONOMY BUSINESS

**Inspire and shape**

a digital world that reinvents  
waste, recycling, and  
environmental services

**SAP**

Run Simple.



# Thank you.

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THE BEST RUN 





2017



IS THE WORLD

LEADER IN

ENTERPRISE  
APPLICATIONS IN TERMS OF  
SOFTWARE AND SOFTWARE-  
RELATED SERVICE REVENUE.  
BASED ON MARKET

CAPITALIZATION, WE ARE THE

390,000+  
CUSTOMERS IN MORE  
THAN 190+ COUNTRIES

92%  
OF FORBES GLOBAL  
2000 ARE SAP  
CUSTOMERS

17,000+  
SAP PARTNER  
COMPANIES  
GLOBALLY  
91,000+  
EMPLOYEES IN 190+  
COUNTRIES

## LINEAR BUSINESS MODELS

DESCRIBE THE LOGIC OF CLASSIC WASTE COMPANIES, THE WAY THEY OPERATE, AND HOW THEY CREATE VALUE TODAY.

- LINEAR-FOCUSED WASTE COLLECTION AND ENVIRONMENTAL SERVICES
- DROP-OFF CENTERS
- TRADING OF WASTE
- WASTE-FOCUSED TRANSPORT SERVICES
- DISPOSAL (CLASSIC INCINERATION, LANDFILLING)
- CLASSIC CONSULTING SERVICES FOR WASTE
- GREEN-WASHING/GREEN-EMPATHY-WASHING (IMITATION OF CIRCULAR ECONOMY BUSINESS MODELS)



## DIGITAL CIRCULAR ECONOMY



## CIRCULAR BUSINESS MODELS

OUTLINE NEW WAYS FOR OPERATIONS AND VALUE CREATION BASED ON THE ZERO WASTE PHILOSOPHY. THEY CAN BE LEVERAGED ACROSS ALL INDUSTRIES AND WILL MAKE CLASSIC LINEAR BUSINESS MODELS OBSOLETE.

- CLOSED-LOOP RECYCLING (MATERIAL RECOVERY)
- DOWNCYCLING (ENERGY RECOVERY, WASTE TO ENERGY)
- UPCYCLING
- INDUSTRIAL SYMBIOSIS/WASTE AS A RESOURCE
- CIRCULAR-FOCUSED COLLECTION SERVICES/ ZERO WASTE ENVIRONMENTAL SERVICES
- ECO-DESIGN/SUSTAINABLE DESIGN
- EXTENDING PRODUCT LIFECYCLE

## BUSINESS MODEL TOOLKIT

### ENABLING BUSINESS MODELS

ENABLE OR ENHANCE ALL OTHER BUSINESS MODELS. SUCH ENABLING MODELS ARE INDEPENDENT OF THE MATERIALS FLOW PHILOSOPHY IN THEIR NATURE.

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- PERSONALIZATION/USER-ORIENTED PRODUCTS
- COLLABORATIVE CONSUMPTION SHARECONOMY
- FINANCIAL OPTIMIZATION LEVERAGES FINANCIAL MECHANISMS TO OPTIMIZE THE COMPLETE PRODUCT LIFECYCLE
- POLICY INNOVATION, LICENSES, CERTIFICATION OFFER THE AGILITY TO ADAPT TO CHANGING REGULATIONS AND SIMILAR SOFT DEMANDS FROM THE MARKET

### DIGITAL BUSINESS MODELS

CHANGE OTHER BUSINESS MODELS THROUGH TECHNOLOGY INNOVATIONS. THE FUNDAMENTALLY INCREASING EFFICIENCY CAN MAKE CLASSIC WAYS OF OPERATION UNPROFITABLE.

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- SIMPLIFIED AND INNOVATIVE DIGITAL CORE LEVERAGES AN INNOVATIVE PLATFORM FOR CORE BUSINESS PROCESSES THAT IS POWERED BY IN-MEMORY COMPUTING AND BIG DATA COLLECTION. PROCESS PLATFORMS

THE DIGITAL CIRCULAR ECONOMY IS BASED ON THE INNOVATIVE COMBINATIONS OF THESE BUILDING BLOCKS TO DEVELOP INNOVATIVE WAYS OF VALUE CREATION. THE DIGITAL BUSINESS MODEL TOOLKIT IS CHANGING IT COMPLETELY SO THAT CLASSIC LINEAR-FOCUSED AND CIRCULAR BUSINESS MODELS ARE NOT NEEDED ANYMORE (ZERO WASTE, SOURCE: 1) "A COLLABORATIVE TOOLKIT FROM FORUM FOR THE FUTURE AND UNILEVER": <https://www.forumforthefuture.org/project/circular-economy-business-model-toolkit/overview>, 2) "CIRCULAR ECONOMY IN EUROPE -- DEVELOPING THE KNOWLEDGE BASE," EUROPEAN ENVIRONMENT AGENCY [www.eea.europa.eu/publications/circular-economy-in-europe](http://www.eea.europa.eu/publications/circular-economy-in-europe)

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