

# CASH MATTERS

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Director Distribution Europe  
Belgrade Dec. 4th 2019



# Who are we?

## G+D secures physical and digital values in four major playing fields

Enabling secure  
**Payment**  
transactions in  
physical, electronic  
and digital form



Providing secure  
**Connectivity**  
solutions for mobile  
devices in the  
Internet of Things



Safeguarding  
**Identities**  
and authentication  
of persons and  
objects



Protecting  
**Digital  
Infrastructures**  
systems, networks  
and confidential data



### Security

Creating confidence through **physical security components**  
and hardening solutions with **digital security technology**



## New company structure – G+D operates as a Group



## G+D numbers: Growing & solid business

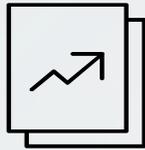
Sales



**2.25**

billion Euro

Earnings (EBIT)



**120**

million Euro

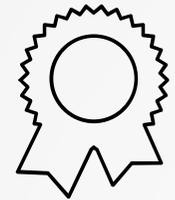
Solution and  
Service Business



**+13%**

Sales

Patents granted



**+17%**

Increase

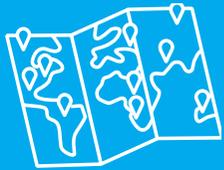
## New company structure – G+D operates as a Group



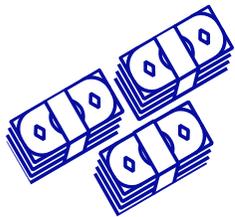
## Securing Values

### G+D Currency Technology

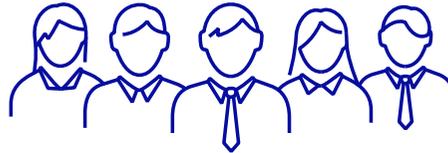
**~1 bn €** revenue



**~150 countries**  
rely on our products



**140 bn**  
banknotes  
printed to date



**~4,800**  
employees worldwide



**1,200**  
service  
technicians  
worldwide

**60,000**

Processing systems  
delivered



**5,000**

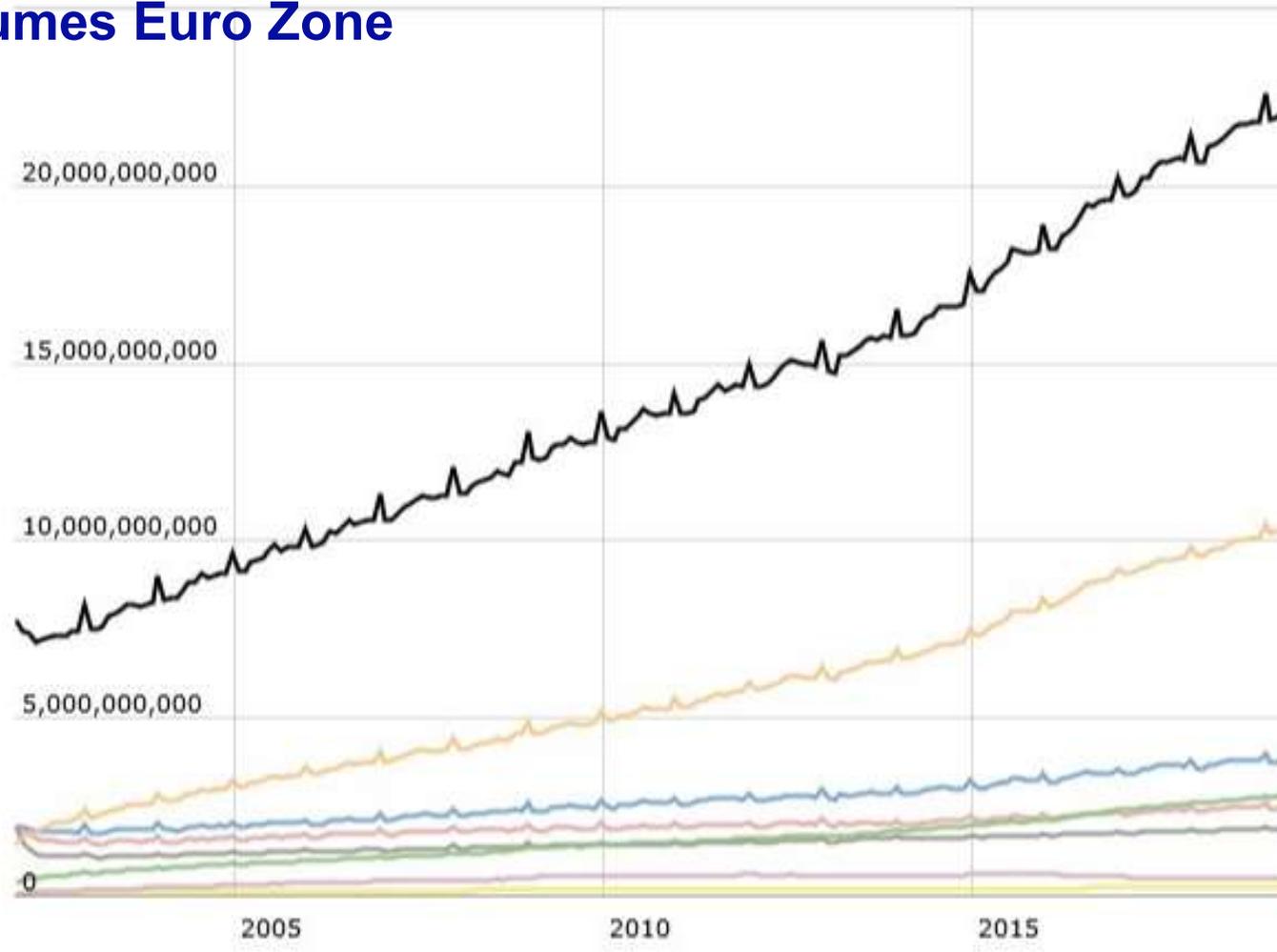
cash centers  
worldwide  
use our  
technologies



**3,900**  
living patents

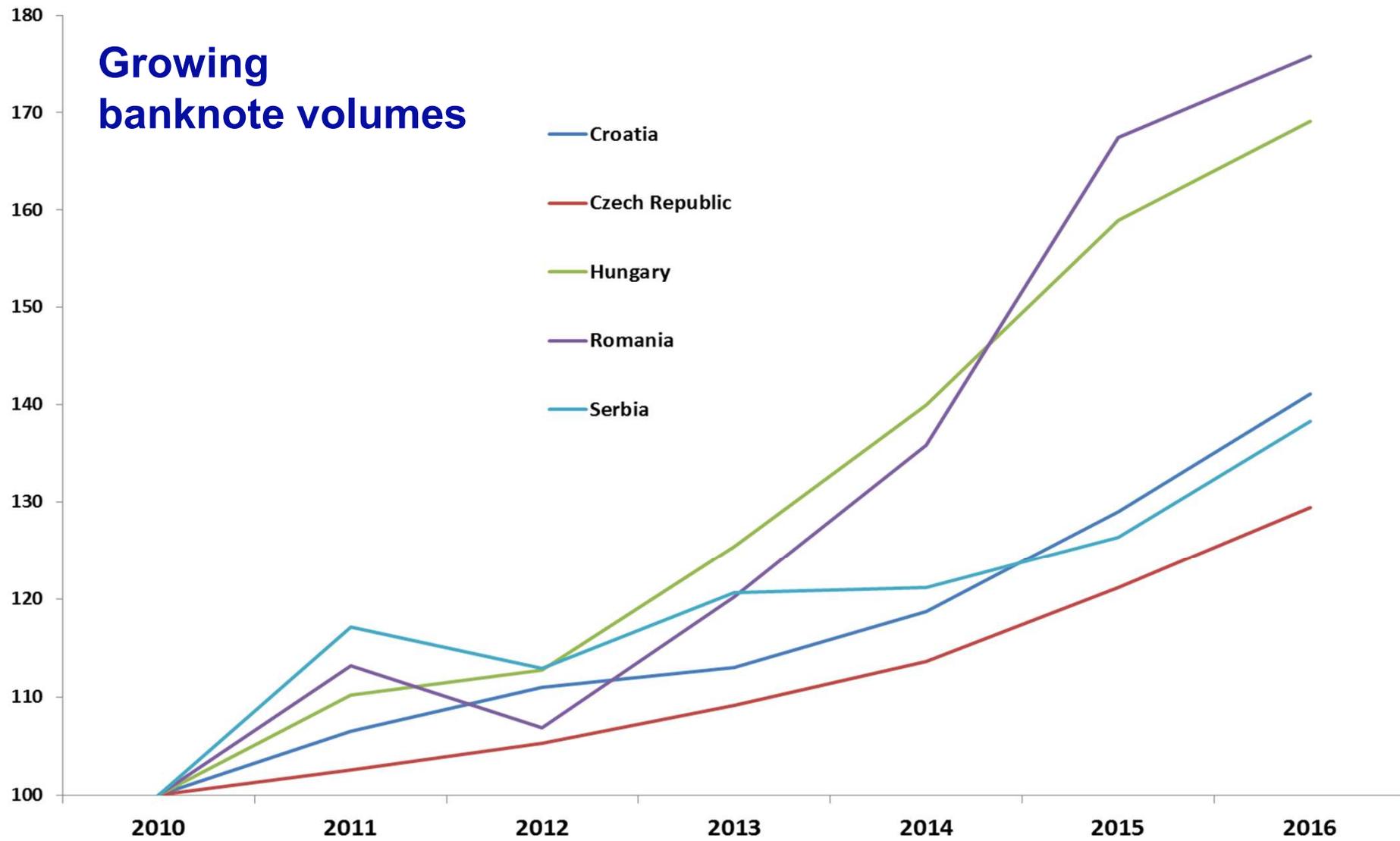
**Cash Usage:**  
**In your region, CASH IS still KING**

## Growing banknote volumes Euro Zone

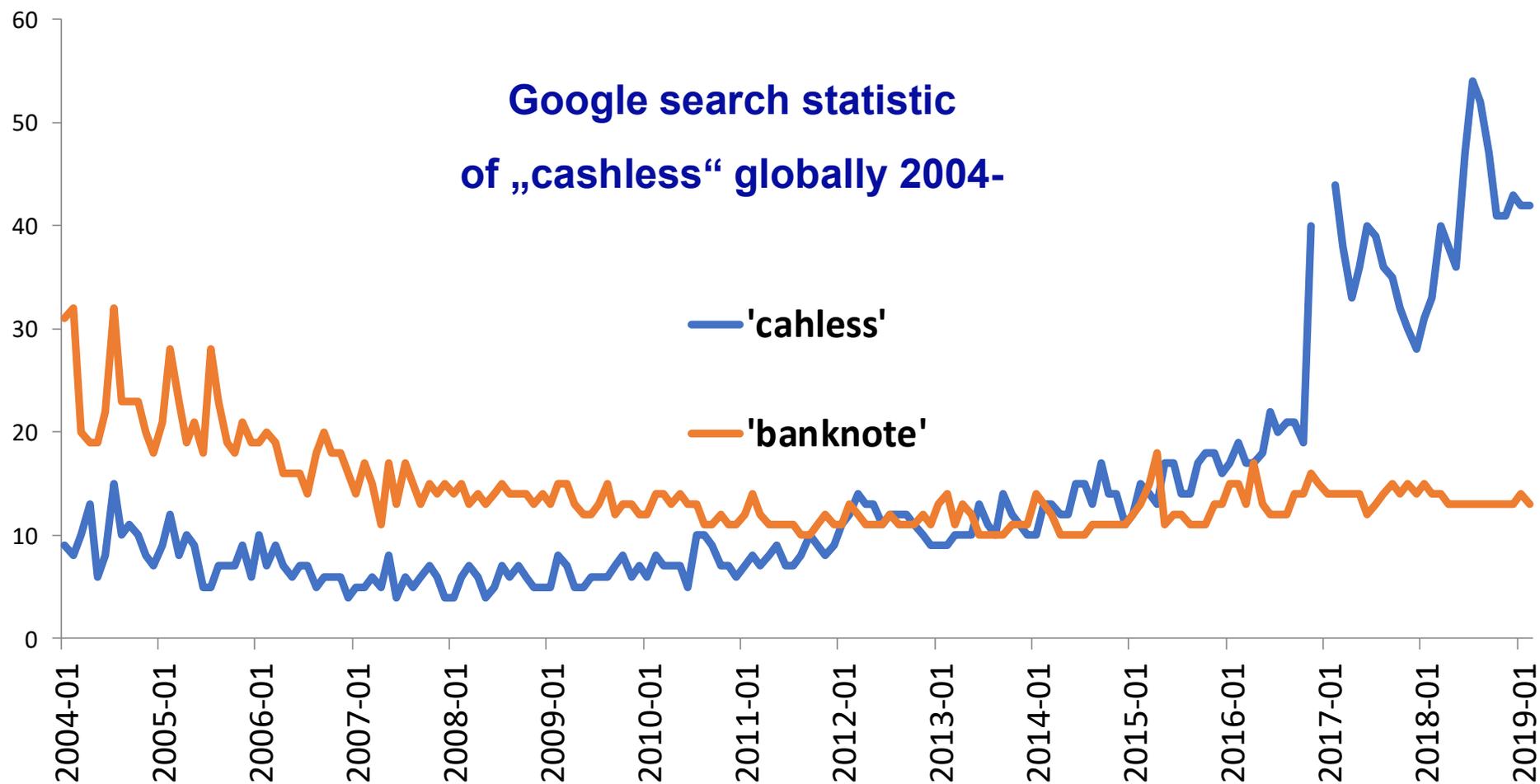


Source ECB Webpage

## Growing banknote volumes



## But: A less-cash trend coming ...?



Cash has to be competitive!



## Optimization trends of banknotes & coins – what may affect you ...

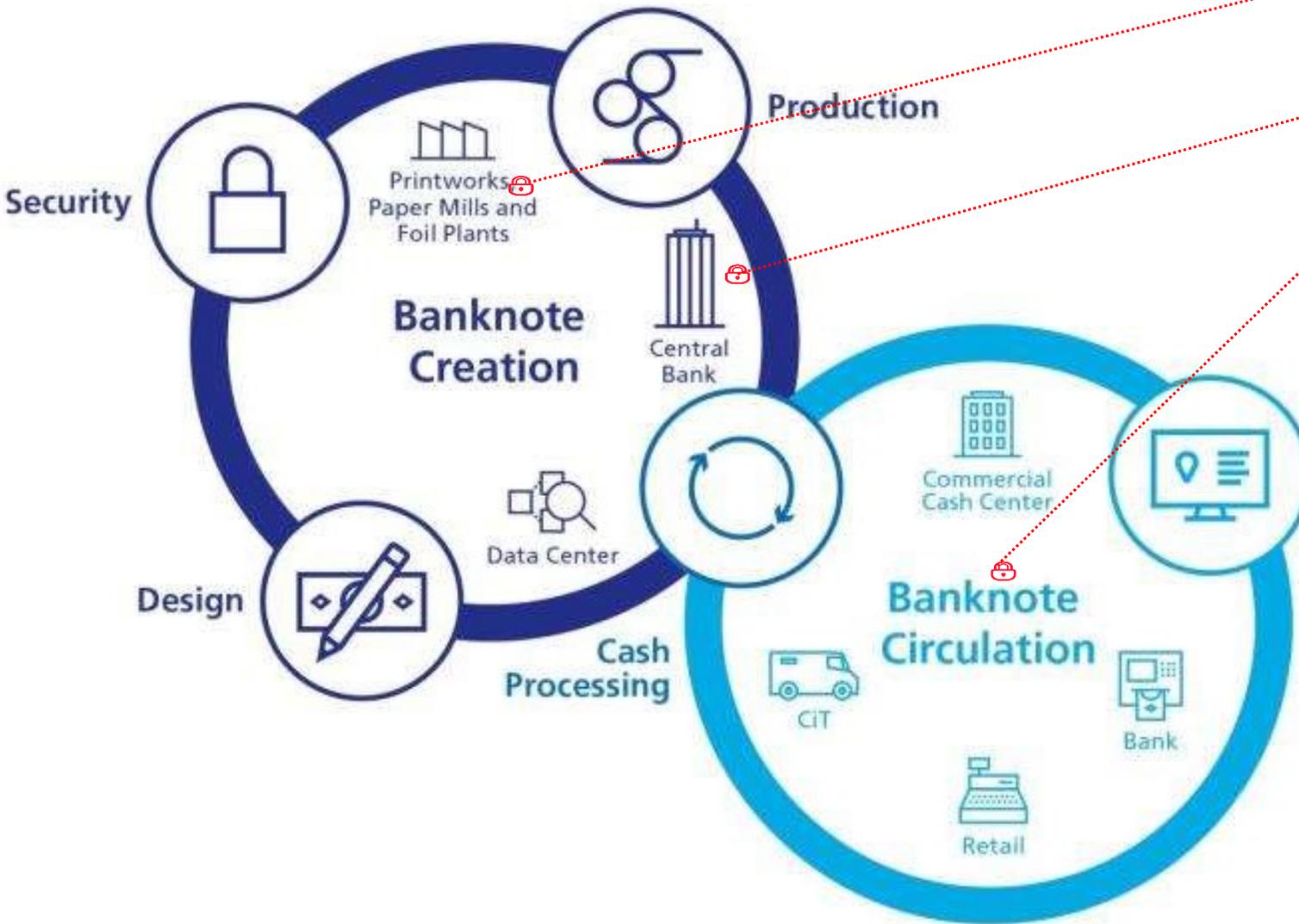


High(er) value notes?

Security upgrades

Coin / note boundary ↑

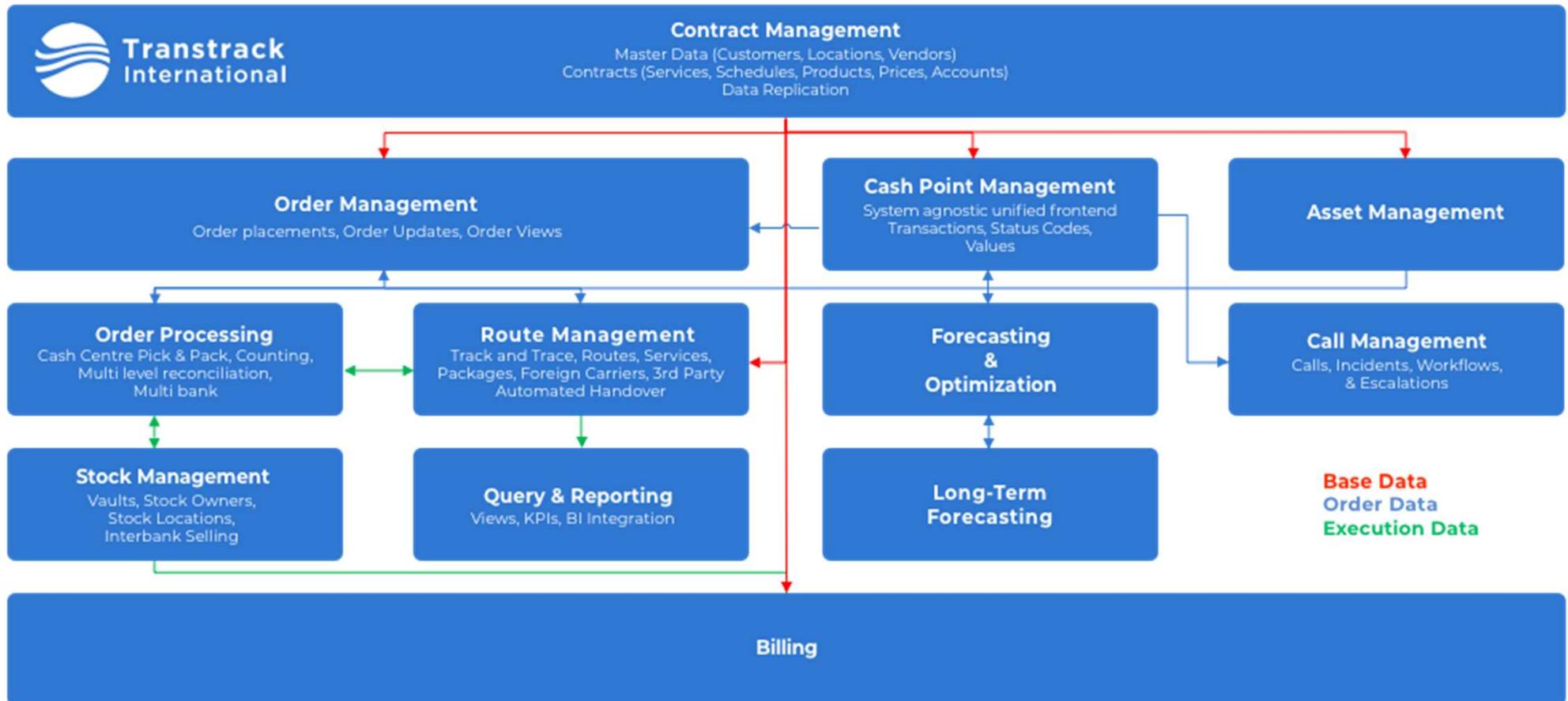
Eliminating 'small change'



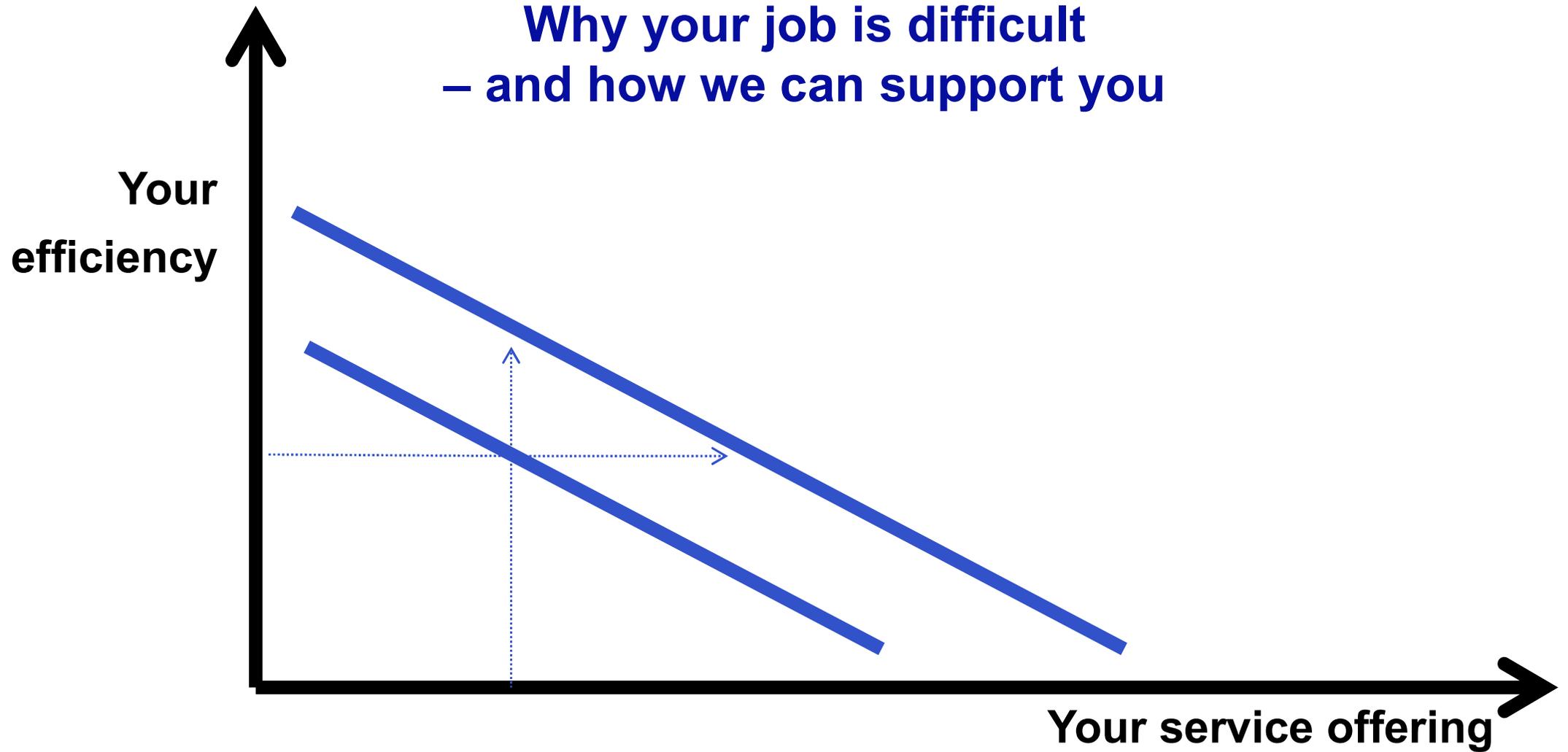
**Cash cycle management of tomorrow:**

**Micro-level Data based**

# Connecting processes E2E

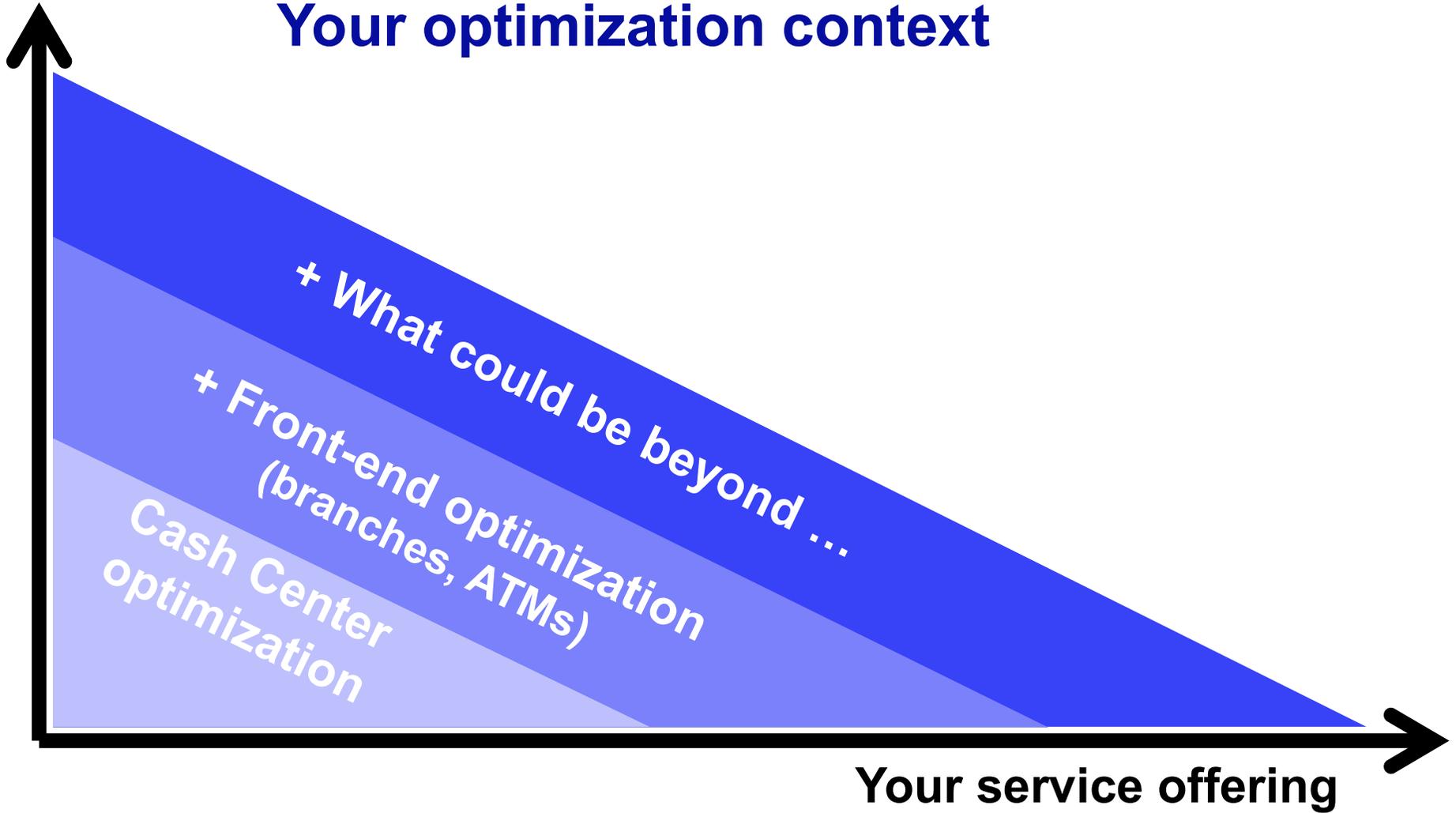


## Why your job is difficult – and how we can support you



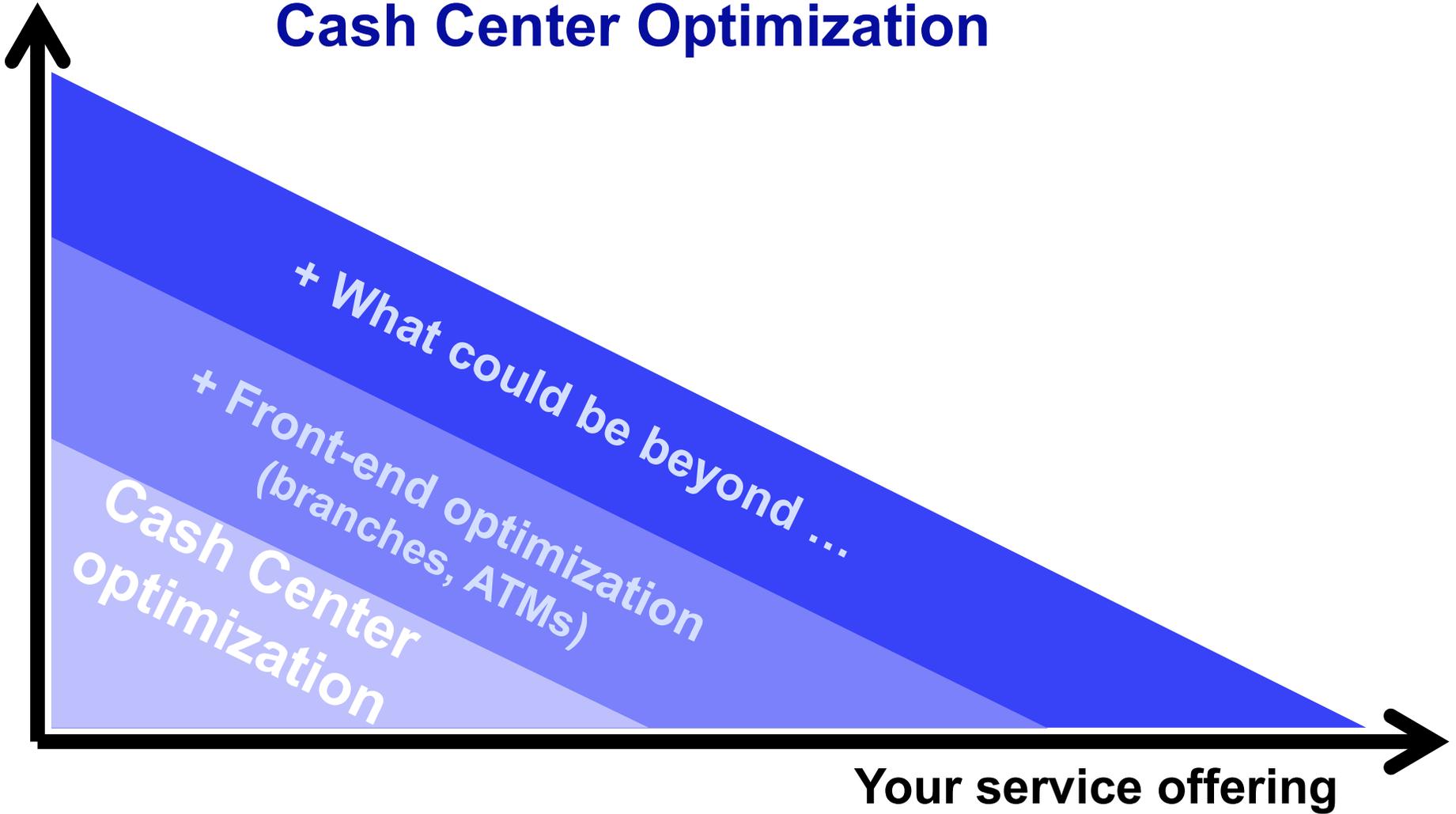
# Your optimization context

Your efficiency



# Cash Center Optimization

Your efficiency



# G+D Portfolio for commercial cash centers / 5 years ago ...



# G+D portfolio today!



# Our coverage of Cash Centers / Rooms: "One-stop shop"

Small volumes

Higher volumes

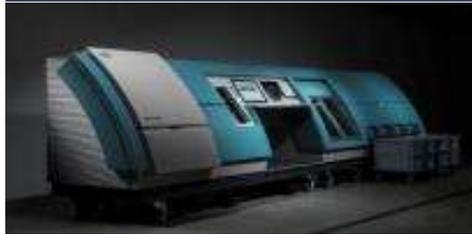
BPS® C2



BPS® C5



BPS® M3



BPS® M5



Consulting

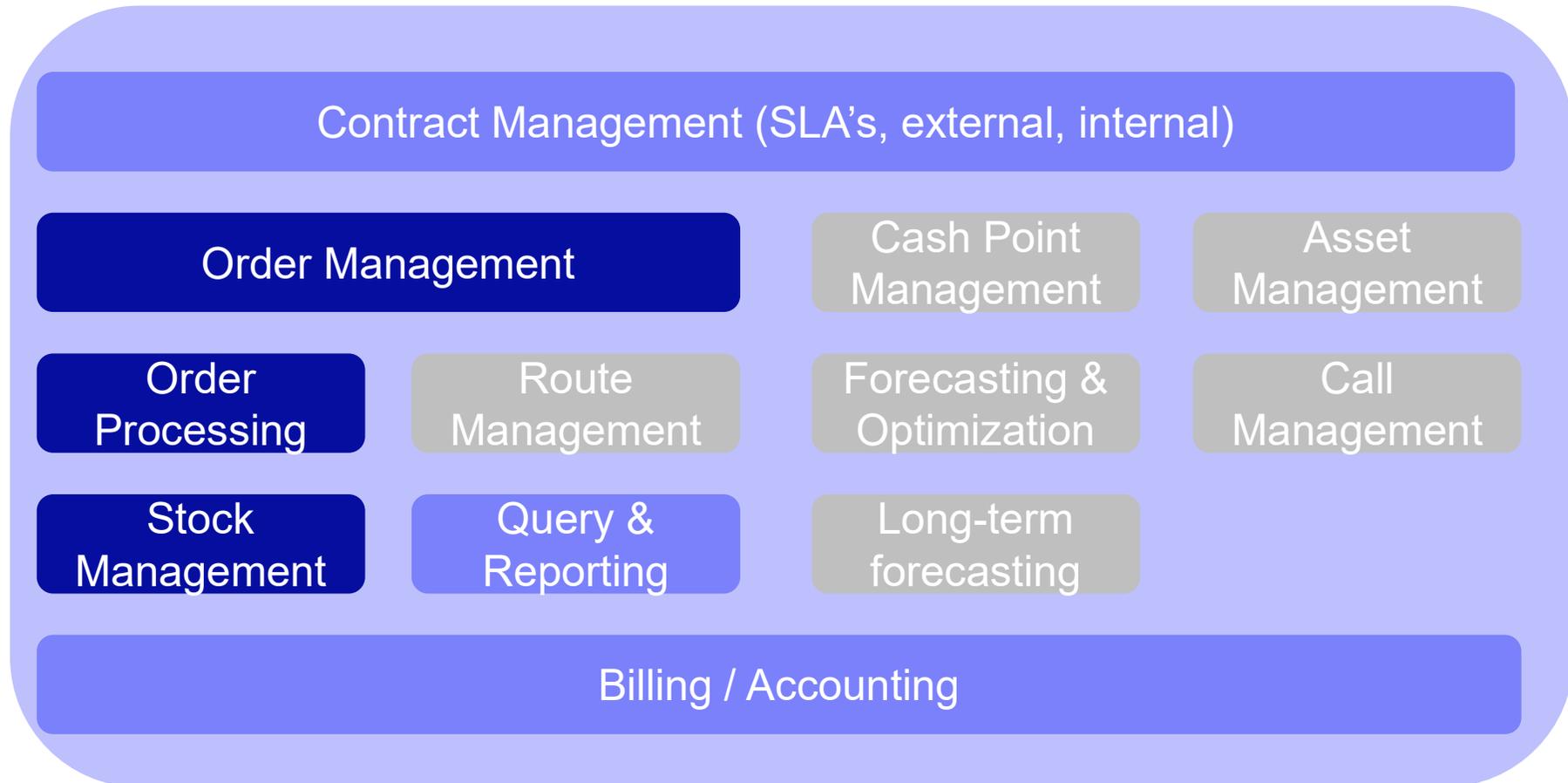


Coin solutions



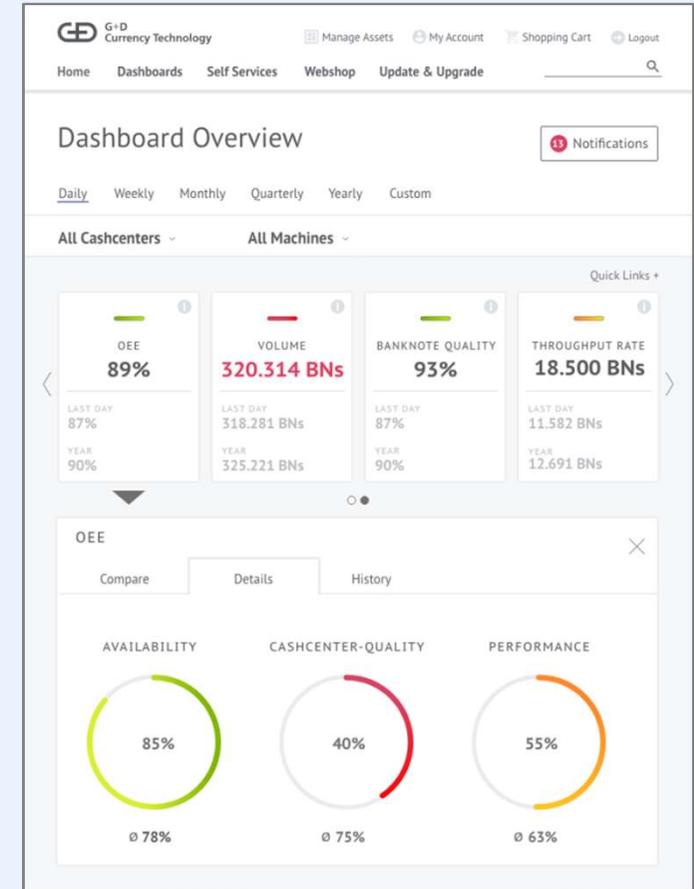
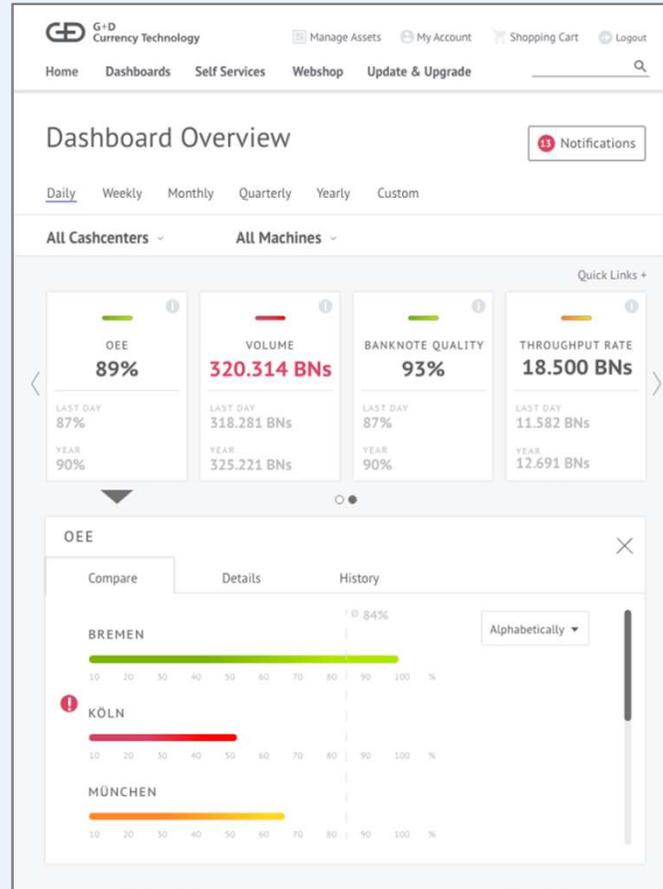
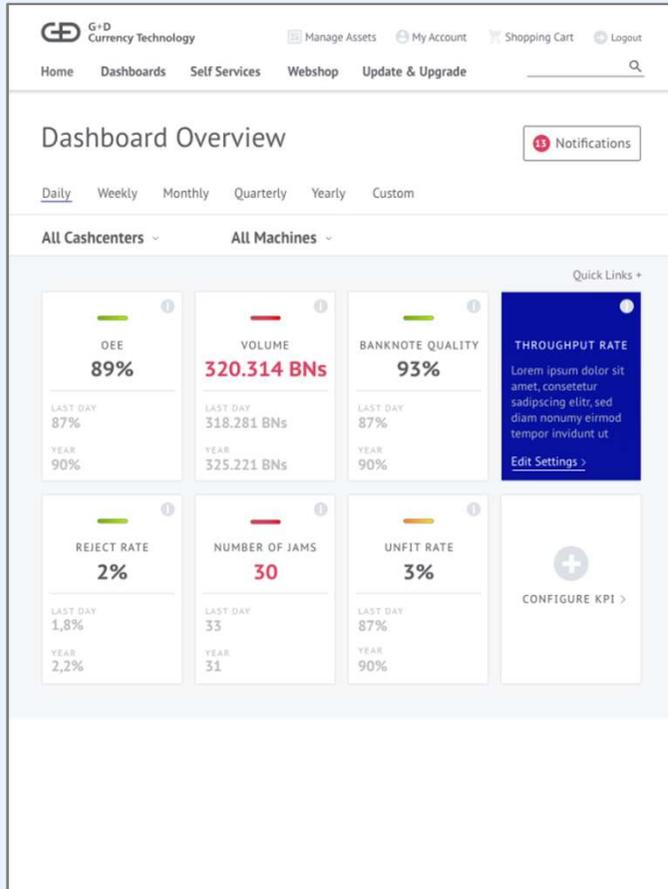
Software solutions

## Relevant software for your cash center (back-end)



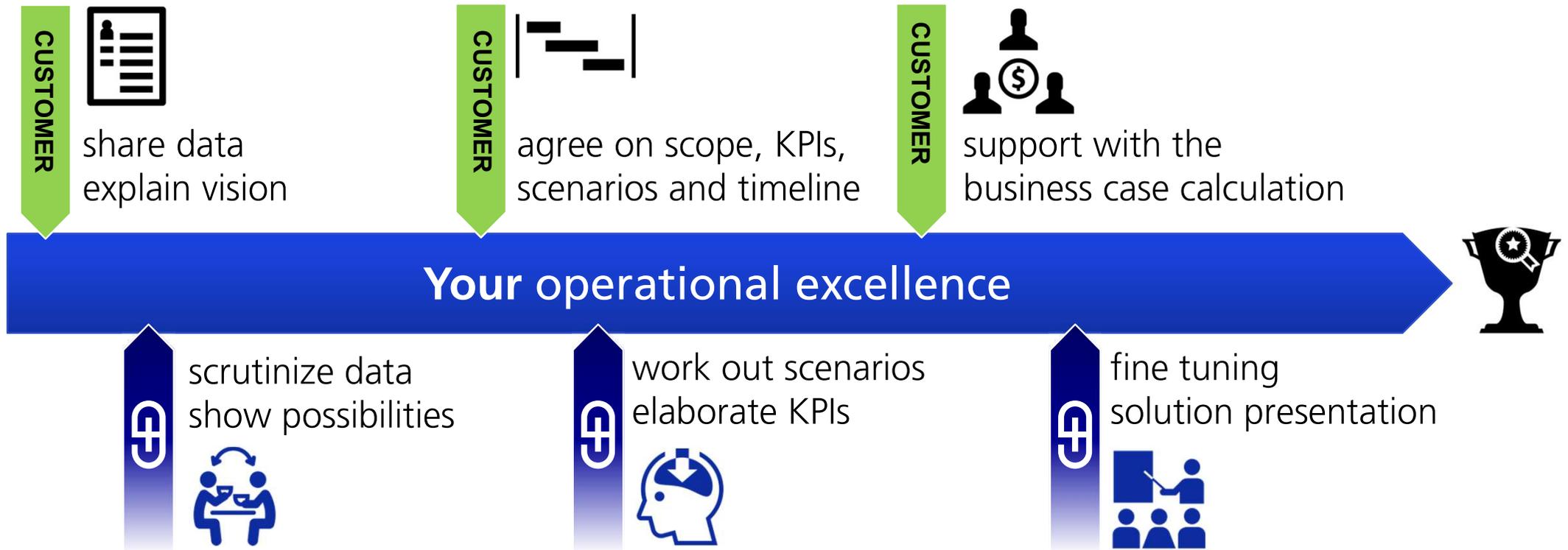
# Should you have your own software ...:

## CT Performance Dashboard – KPIs at a first glance



# How do we do an analysis?

# Cash Center optimization – a collaborative approach:



# Example 1: Large size cash centers

## Example – a recent customer project somewhere in Europe ...

# RFI (RFP) Cash 2020 for Coin & Cash Centers

### Outcome:

expects a described a two step outcome;

- The short term which describes what can be realized within maximum 1 year
- The long term vision which states what is feasible within 3 till 5 years

### Per term requires:

- Process changes and impact
- Investments, if needed
- Efficiency improvements
- Quality improvements
- Security impact or improvements
- Advised number of branches
- Minimum and maximum capacity
- Flexibility
- Other improvements
- Other Requirements
- For short term: how does this fits in long term vision?
- Time-lines
- Plus and delta's

## We started working ...

## Recommended Cash Center Scenarios

**There are 3  
Scenarios of  
interest**

- 1** Replacement
- 2** 1-step Process
- 3** High Speed Sorting

## Recommended Cash Center Scenarios

### Scenario 1

### Replacement

Numeron → BPS C2  
BPS 200 → BPS C4  
keep current process

keep all cash centers  
marginal savings



BPS C2



BPS C4

## Recommended Cash Center Scenarios

BPS C4



4 x BPS C4 per cash center with **1-step processing**. (Manual) continuous feeding because of **header card processing**

Scenario 2

1-step process

BPS 200 → BPS C4  
1-step process  
header cards

close 2 cash centers  
potential savings ~9%?  
critical process change

## Recommended Cash Center Scenarios

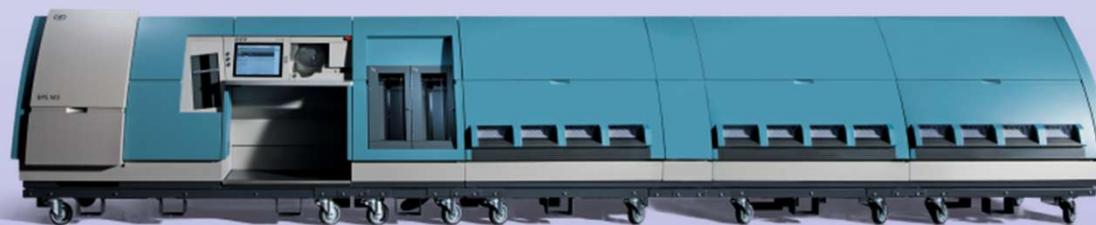
BPS M3

### Scenario 3

#### High speed sorting

BPS 200 → BPS M3  
automated feeding  
automated strapping  
1-step process  
header cards

close 2 cash centers  
potential savings ~20%  
new technology, new  
processes, future proof



BPS M3 with  
NotaTracc per cash  
center. High speed  
sorting with  
automated  
continuous feeding

## Recommended Cash Center Scenarios



### Scenario 1

#### Replacement

Numeron → BPS C2  
BPS 200 → BPS C4  
keep current process

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marginal savings

### Scenario 2

#### 1-step process

BPS 200 → BPS C4  
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header cards

close 2 cash centers  
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### Scenario 3

#### High speed sorting

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automated strapping  
1-step process  
header cards

close 2 cash centers  
potential savings ~20%  
new technology, new  
processes, future proof

Details –

Quantitative simulation, alternatives

KPIs:

- labour costs
- process time (hrs)

### Scenario Comparison

|   | 3              |                   |
|---|----------------|-------------------|
|   | Current        | HDP M3 LDM 2 CC   |
| Productivity  | 73%            | 73%               |
| Productivity (incl.ADV and Leave)                                 | 86%            | 86%               |
| Labour hours Numeron Scenario's 1 and 2, Prepping 3, 4 and 5      | 48.784         | 58.407            |
| Labour hours BPS "mix" scenario's 1 and 2; Full HDP 3, 4 and 5    | 25.513         | 11.808            |
| Labour hours remaining on counting activities                     | 44.169         | 26.710            |
| <b>Total labour hours countings</b>                               | <b>118.465</b> | <b>98.815</b>     |
|   |                | <b>-17%</b>       |
| Labour hours orderpicking lobby                                   | 5.028          | 5.028             |
| Labour hours orderpicking retail                                  | 3.471          | 3.471             |
| <b>Total labour hours Orderpicking</b>                            | <b>8.499</b>   | <b>8.499</b>      |
| Labour hours remaining activities                                 | 9.943          | 9.943             |
| <b>Total direct labour hours</b>                                  | <b>138.907</b> | <b>117.298</b>    |
|   |                | <b>-14%</b>       |
| Labour hours coordinators   | 18.782         | 9.391             |
| Labour hours illness  | 11.624         | 9.408             |
| Labour hours verlof / ADV   | 28.014         | 22.789            |
| Labour hours grey / remaining hours                               | 19.116         | 15.550            |
| <b>Total indirect labour hours</b>                                | <b>77.537</b>  | <b>57.188</b>     |
|   |                | <b>-26%</b>       |
| <b>TOTAL LABOUR HOURS</b>   | <b>214.444</b> | <b>174.442</b>    |
|   |                | <b>-19%</b>       |
| # Cashcenters   | 4              | 2                 |
| # BPS 200   | 11             | 0                 |
| # BPS C4  | 1              | 0                 |
| # BPS M3 LDM  | 0              | 4                 |
| <b>Theoretical Savings in Euro/Annum</b>                          | <b>€ -</b>     | <b>€ -806.326</b> |
| <b>Variables</b>  |                |                   |
| Hourly Rate GAS: € 20,23 from "Mothershed" tab "Benchmark" (104 ) | € 20,23        |                   |
| Reject-rate on "Total BPS"  | 10%            | 5,0%              |
| Counting speed Numeron: BN/min "net"                              | 750            |                   |
| Remaining hours BPS ratio   | 44%            | 20%               |
| Throughput in notes/hour  | na             | 50.000            |
| Peakfactor  | na             | 0%                |
| <b>Counting window in Hours per day</b>                           |                |                   |
|   | Mon            | 7,5               |
|   | Tue            | 10,0              |
|   | Wed            | 10,0              |
|   | Thu            | 8,0               |
|   | Fri            | 7,5               |
|   | Sat            | 4,0               |

# Layout with high speed sorter BPS M3/M5



Example – a recent customer project somewhere in Europe ...

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- For short term: how does t
- Time-lines
- Plus and delta's



## Example 2: Small size cash center

## Solution FDP

Situation

5 days operation / 7 hours

7 FTE

1+1 and 2+1 stacker machines

Manual data entry

## Solution / results:

Multi stacker machine

FDP function

Connected to CMS

=> Only 2 FTE's needed!





# Example 3: Medium size cash center

## Solution Headercard / 1-step process

### Situation:

- a lot of small deposits
- separate processing of every single deposit
- multiple runs of banknotes not efficient and secure
- manual data input



## Fase 2 – Processo con headercard

**Customer statement**

### Sala conta di XXXX – KEY POINTS di con HEADERCARD per Banche

Banconote selezionate giornalmente: da 380.000 a 460.000 (media 420.000)

Selezionatrici in uso: n. 3 UWH1000 n. 6 UWH600

Personale utilizzato in apertura buste: 8 FTE

Personale utilizzato in selezione: 3 FTE

Produttività C4: 30.000 BN/h

BPS-C4 necessarie per 420.000 BN al giorno: 1 su due turni in continuo (utilizzo 14 ore).

Personale necessario in preparazione: 4 FTE

Personale necessario per n.2 BPS-C4: 2 FTE

**Risparmio personale giornaliero: 4 FTE**



# ROI

**Customer statement**

Selezionatrice

L'investimento si ripaga in vari modi:

- **Costi di Manutenzione** (maintenance cost)
- **FTE risparmiati** (saving FTE)
- **Qualità dei processi** (improved process quality)
- **Efficienza** (efficiency)
- **Vita delle apparecchiature** (life time of machine)



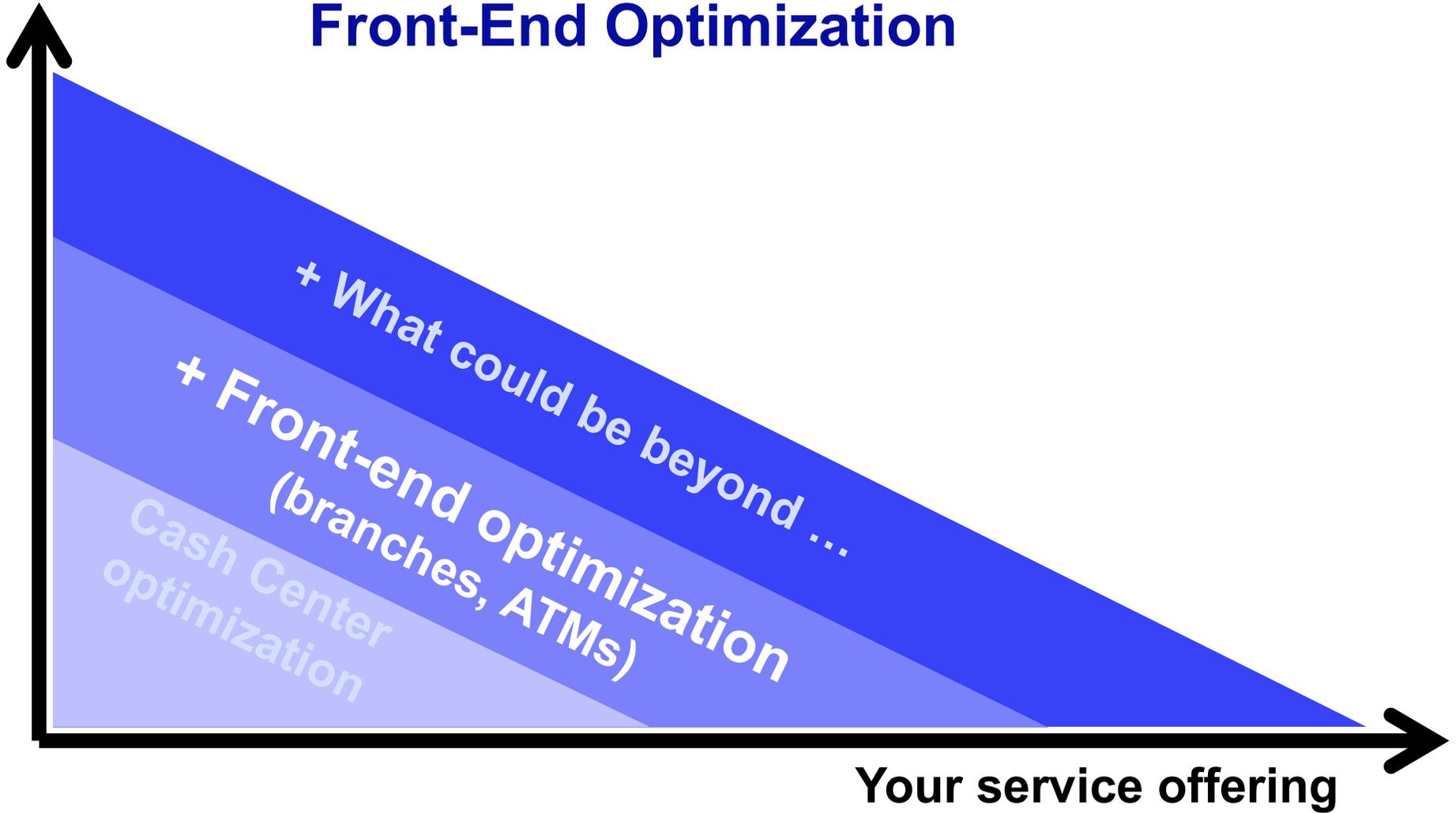
## Smart automation: set standards, improve logistics

- Containers as standard
- Gravity belts
- Driven belts
- AGVs
- .....



# Front-End Optimization

Your efficiency



## For your branches: Easy-to-use & reliable machines

### Front office

ProNote 1.5



BPS®B1



Coin 200



### Back office

BPS® C1



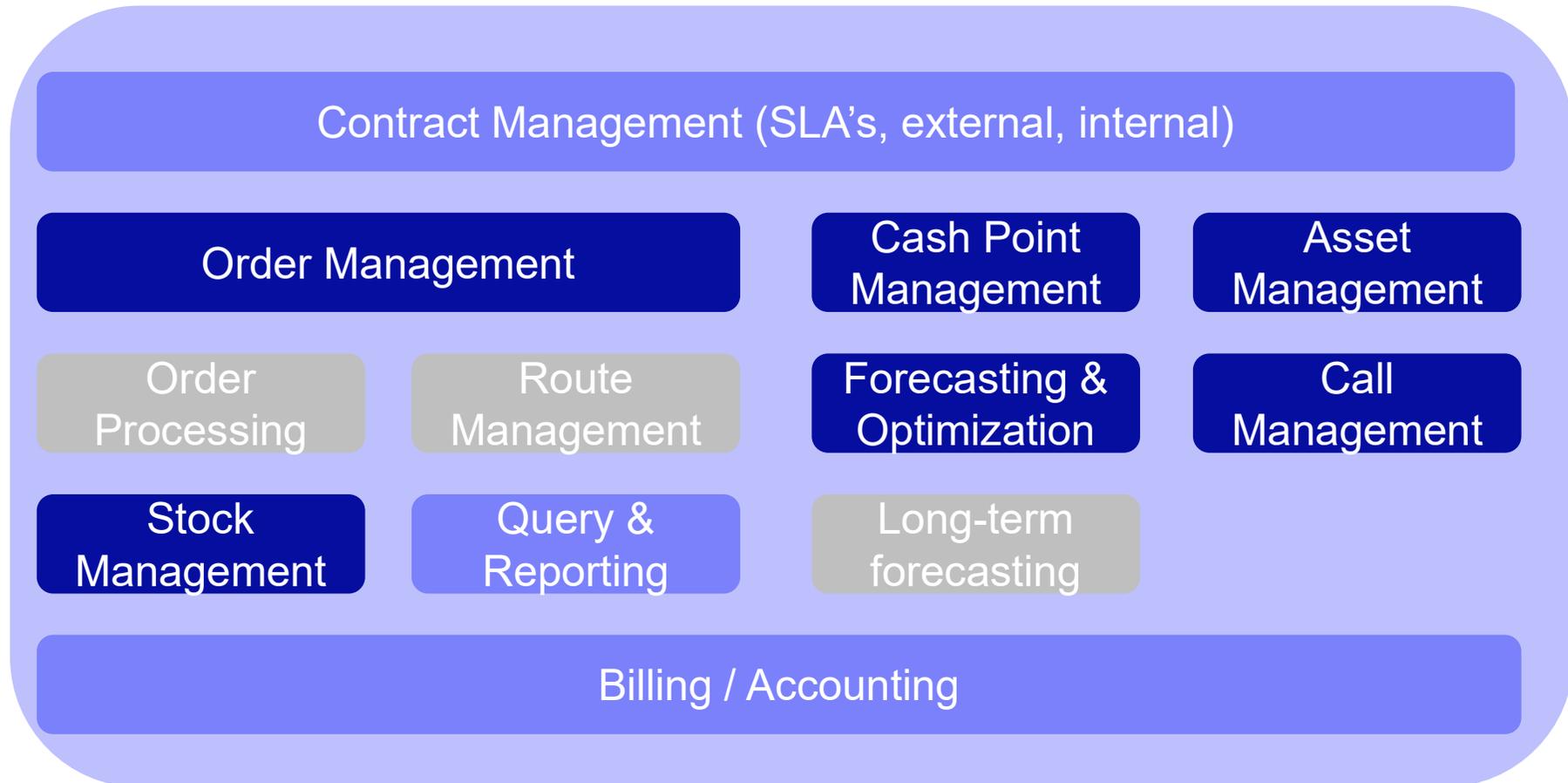
BPS® C2-x



Coin 300

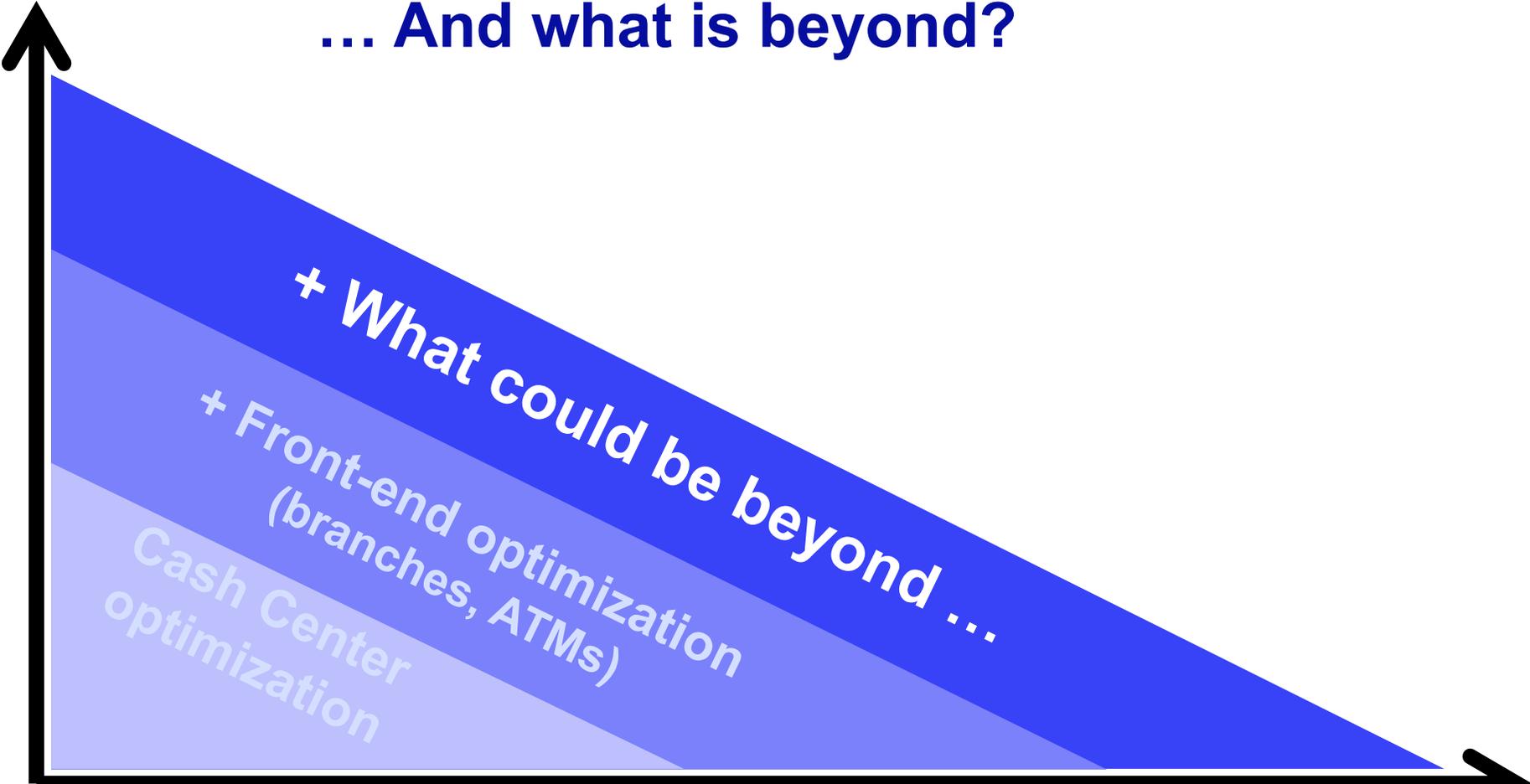


## Relevant software for your front-end (Cash Points)



... And what is beyond?

Your efficiency



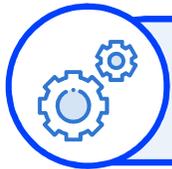
+ What could be beyond ...

+ Front-end optimization  
(branches, ATMs)

Cash Center  
optimization

Your service offering

# Your options to reduce your costs – we are there to support



## Optimization of internal operations

- Smart cash planning
- Smart monitoring of cash points incidents
- Integration and automation of the processes



## Outsourcing / Managed Service

- Transferring cash operations to third-party providers can:
  - Reduce costs
  - Higher economies of scale



## Multi-bank cooperation

- Collaborating in cash processing and distribution, banks can:
  - Reduce costs
  - Manage outsourcing risks

# Managed Services setup: an option between in-house / outsourced?

## Our experience worldwide



# Multibank setups: We are partners to 9/12 ventures worldwide

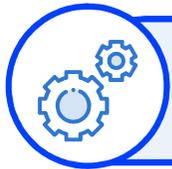
## Interbank (or Utility, or Shared Service) Models for cash operations – an informal overview

(Updated: September 2016)

| Country  | Name of company  | Web   | Start                         | Ownership  | Central Bank role                                    | Scope of main operations and services   | Other information   |
|----------|--|---|-------------------------------|--|--|---|---|
| Austria  | Geldservice Austria (GSA)  | <a href="http://www.geldservice.at">www.geldservice.at</a>  | 1999                          | The Austrian National Bank (OeNB) bought the GSG (Geldservice-Gesellschaft GmbH) from commercial banks and GSA was founded. The central bank holds 95% of the shares, the rest are owned by more than 40 Austrian commercial banks (eg. Bank Austria, Erste Bank, BAWAG, Raiffeisen, ...) and the Austrian Post. |  | <ul style="list-style-type: none"> <li>Euro currency delivery to/from branch offices</li> <li>Night depository services</li> <li>ATM operations: All machine types (Cash dispensers, Cash-recyclers, etc.), Automated Night Vault (Multibox)</li> <li>Processing of vouchers, Coin processing and rolling</li> <li>Foreign currency &amp; precious metal delivery to/from branch offices</li> <li>Euro and foreign currency dealing (operations)</li> </ul> | G+D customer: BPS1000/ M7, Notapeck, Notatreck; SW solutions in discussion.   |
| Brazil   | Tecban   | <a href="http://tecban.com.br/pars-os-bancos">http://tecban.com.br/pars-os-bancos</a>   |                               | Nine banks established Tecban decades ago with shares from 25% to 2.5% (three have total of 61%).  | Not relevant   | <ul style="list-style-type: none"> <li>ATM mngmt: with cc. 20k ATMs the sole agent for the incl. service</li> <li>CIT and cash center for the processing of banknotes</li> <li>Switch intrabank and interbank</li> </ul>  | G+D customer with BPS C4 and C1.  |
| Bulgaria | Cash Service Company   | <a href="http://www.dkv.bg/en/home.php">http://www.dkv.bg/en/home.php</a>   | 2007                          | Bulgarian National Bank 20%; Uni Kredit 20%; Raiffeisen Bulgaria 20%; DSK Bank AD 20%; United Bulgarian Bank AD 20%  | Yes, shared  | <ul style="list-style-type: none"> <li>Banknotes processing: counting change of banknotes and coins; loading of ATMs; vault function for BNB; no transport function. 3 cash centers in Bulgaria.</li> </ul>   | G+D customer with cc. 18x BPS200/C4   |
| Denmark  | Bankernes (BKS)  | <a href="http://www.bks.dk">http://www.bks.dk</a>   |                               | 10 banks (97% of the shares) from the CB is NORDEA Bank, Danske Bank, Jyske Bank SOLD TO LOOMIS  | The CB initiated the the founding of BKS.            | High-volume banknote processing, ATM cassettes logistics. A modern, automated cash center was built in 2014.  | G+D customer with 2x BPS M7 + Notatreck + packaging unit technology. SOLD TO LOOMIS in Aug 2016.  |
| Malaysia | Malaysia Electronic Payment System (MEPS) Currency Management Sdn Bhd. | <a href="http://www.mepls.com.my/mepls-service/currency-notes-processing">http://www.mepls.com.my/mepls-service/currency-notes-processing</a> | 1997-98                       | Wholly owned by Financial Institutions (11 participating Banks).   | Not shareholder, but grants special agent functions. | MEPS Currency Management has 6 branches throughout West and East Malaysia. Processes 6.5 million notes per workday. It is the sole agent of Central Bank Malaysia to undertake sorting, processing and distributing of currency notes activities: Receiving cash deposits and issue cash from/to banks, Processing the used notes from banks, destroying soiled/reject notes (!), Disposal of destroyed notes.  | Additional services by mother company (MEPS): Interbank ATM Cash Withdrawal, Interbank ATM Fund Transfer, Interbank Credit Card and Loan Repayment, Interbank ATM mobile prepaid, Cross border Cash Withdrawal. |
| Mexico   | Serpaprosa   | <a href="http://www.serpaprosa.com.mx">www.serpaprosa.com.mx</a>  | 1980s, sold to Brinks in 2012 | Originally created by and owned by four commercial banks: Citigroup, BBVA, Santander and HSBC. Then went (near?) bankrupt and was sold to Brinks.  | N/A  | Over 12K staff, and run over 40% of the market.   | Part of Brinks since 2012. 2012 sales over 200-300 million USD.   |

We are ready to support you with advice

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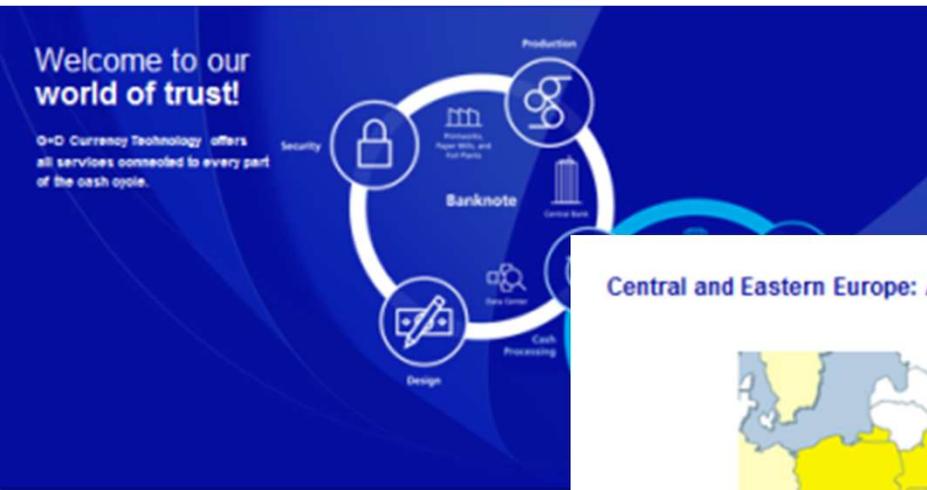


### Multi-bank cooperation

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# G+D Currency Technology: Shared values, shared commitment



G+D Currency Technology

## Central and Eastern Europe: A shared commitment!



G+D Currency Technology

## Your values in purchasing – Our compliance framework

11-Nov-2014 | Munich, Germany

**BnEI**  
Banknote Ethics Initiative

G+D Passes Banknote Ethics Initiative Accreditation  
Munich, November 11, 2014 – G+D, one of the founding companies of the Banknote Ethics Initiative (BnEI), has passed the organization's accreditation process, after having completed the audit undertaken by KPMG. The Banknote Ethics Initiative was launched at the Currency Conference in May 2013. It was established to provide ethical business practice, with a focus on the prevention of corruption and on compliance with anti-trust law within the banknote industry.

Sales channels in Europe:

- Direct only
- Distributor only
- Distributor and direct sales



- Distributor Selection and Management direct from HQ
- > 100 active distributors worldwide
  - > 30 distributors involved in CB/PW business
  - Continuous performance and compliance assessments

Sales Partner Selection & Management: checked by KPMG annually

# Let's touch it!



# CASH MATTERS



Connectivity



Data Analytics



Automation