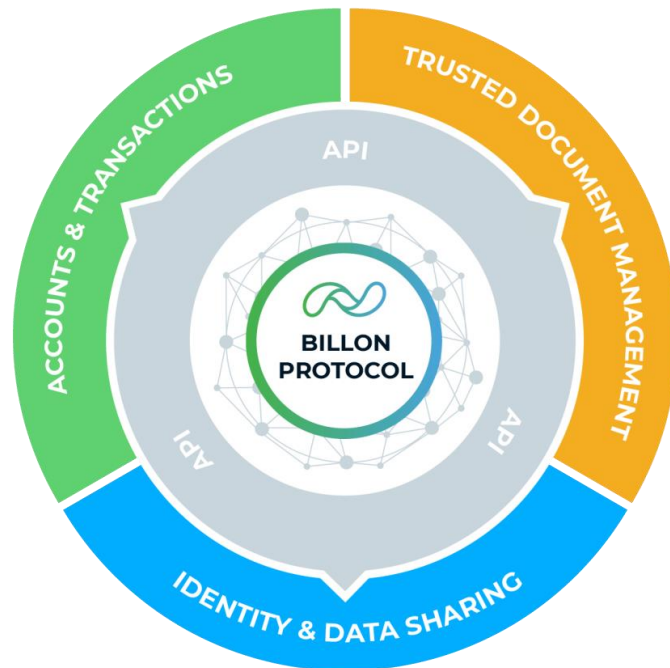




# Rethinking Blockchain:

## A New DLT Protocol for Digital Cash & Personal Data/ Documents

David Putts  
December 2019



# Introduction



## Chief Growth Officer BILLON GROUP

- 10 yrs at McKinsey
- Digital banking leader (Inteligo, Equa Bank, HSBC, Barclays)

## BILLON GROUP PROFILE

**Offices:** London, UK |  
Warsaw, Poland

**Team:** 85+ ( Including  
50+ IT & Tech)

## PARTNERS & PROGRAMS



## PAYMENT LICENCES

UK

Poland

FCA

KNF

CEDUR  
Centrum Edukacji dla  
Uczestników Rynku

## AWARDS



# To Be or Not to Be (Regulated)

**GDP \$80tn\***  
Regulated  
Markets



**GDP \$18tn<sup>2\*</sup>**  
Deregulated &  
Informal Markets

<sup>1\*</sup> - 2017 data- <https://www.worldometers.info/gdp/#growthrate>

<sup>2\*</sup> - forecast data for 2017 - [https://www.accaglobal.com/content/dam/ACCA\\_Global/Technical/Future/pi-shadow-economy-report.pdf](https://www.accaglobal.com/content/dam/ACCA_Global/Technical/Future/pi-shadow-economy-report.pdf)

1



# **Making DLT (Blockchain- Plus) Compliant**

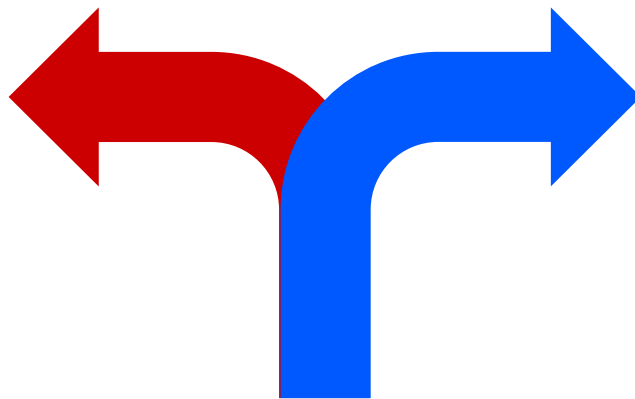
# Billon Adapted to Existing Regulations



## Crypto World

Public crypto-currency architectures

- MINING
- EXCHANGES
- VALUE OR LIQUIDITY VOLATILITY



Distributed ledger technology



## Billon DLT

A new regulated distributed ledger system (blockchain) for money, data, and

- NATIONAL CURRENCY ONLY
- NO 3RD PARTY ECONOMIC AGENTS
- REGULATORY COMPLIANT

# Regulations and DLT / Blockchain



The Electronic Money EU Directive 2009/110/EC

Official Journal of the European Union

Directive 2009/110/EC of the European Parliament And Of The Council Of 16 September 2009 EN

- **Electronic Money (e-Money) Directive**
- **Payments Services Directive (PSD2)**
- **5<sup>TH</sup> Anti- Money Laundering Directive**
- **GDPR Directive**



## Just a few of many challenges for DLT (blockchain):

- **Money**  
fulfillment of e-money directive as true national currency with KYC & AML controls?
- **GDPR**  
how can random nodes be authorised as personal data processors?
- How to fulfill “right to be forgotten” when data is immutable?

# Solution: Modify Underlying Protocol

## KYC & AML procedures

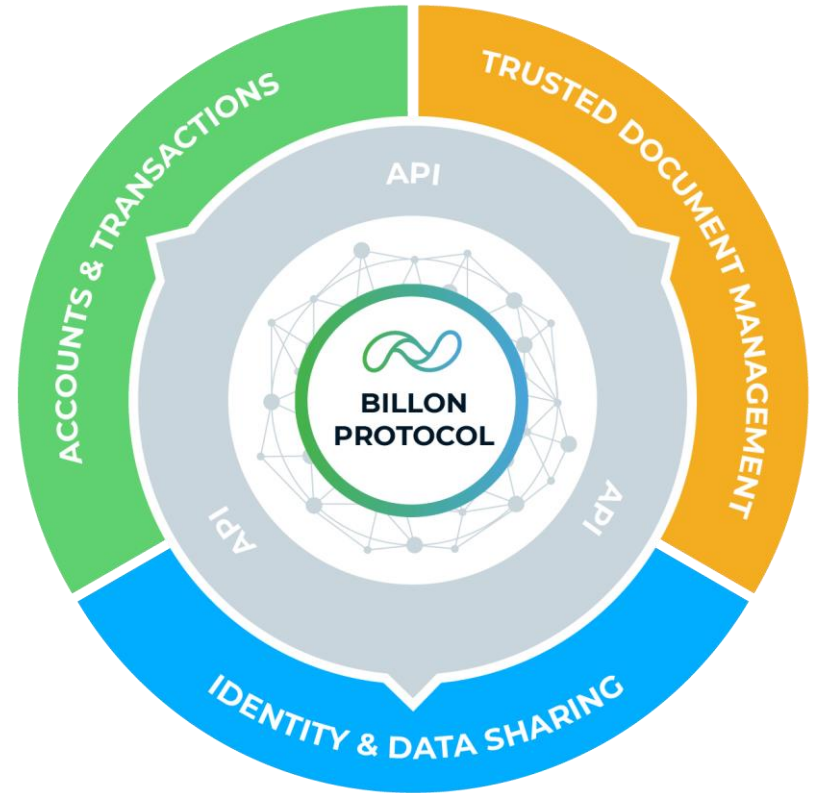
(rule enforcement embedded within atomic transaction at protocol layer)

## Personal Data regulations on DLT

GDPR compliance mechanisms

## Durable Medium requirements: document “on-chain”

Tamper-proof, for high-value documents



# Our Results: Performance & Compliance



## True Digital Cash (cash on-chain) – better than Stable Coin

*Banking rules embedded in protocol layer*



## Durable Medium Compliant

*Shards and stores full documents on-chain*



## Shares identity, data, or logic across permissioned entities

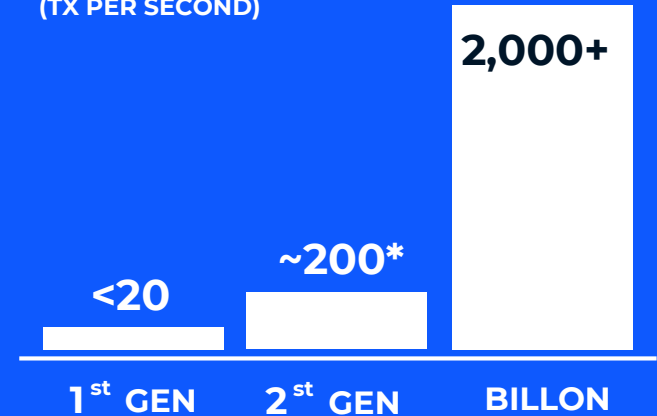
*1st system to be GDPR compliant*

## High Performance, Low Cost

### Throughput

(TX PER SECOND)

(no theoretical limit)





2



# **Digital Cash vs Stable Coins**

# Stablecoin Announcements

**Libra: Facebook launches cryptocurrency to shake up global finance**

June 20 2019 by Kari Paul

**How Fidelity is advancing wholesale blockchain settlement**

November 20 2019 by Anna Reitman

**Tether Says Its Stablecoin Is 'Fully Backed' Again**

November 8 2019 by Nikhilesh De

**To save the euro, turn it into a digital stablecoin**

A bond-backed currency would overcome problems created by incomplete monetary union

November 18 2019 by Thomas Mayer

**The Stablecoin anathema**

November 1 2019 by Izabella Kaminska

**Gemini's GUSD Stablecoin Director Leaves the company as Gemini Dollar Market Share Drops**

November 16 2019 by Daniel W

**European Union to Regulate Stablecoins, Not issue Its Own**

November 6 2019 by Nikhilesh De

# Stablecoin Definition

## Stablecoins

- **Stablecoins are securities**
- **Value can fluctuate**
- **They are guaranteed by the company who issues them.**



libra



UBS



# But... Are Stablecoins Like Cash?

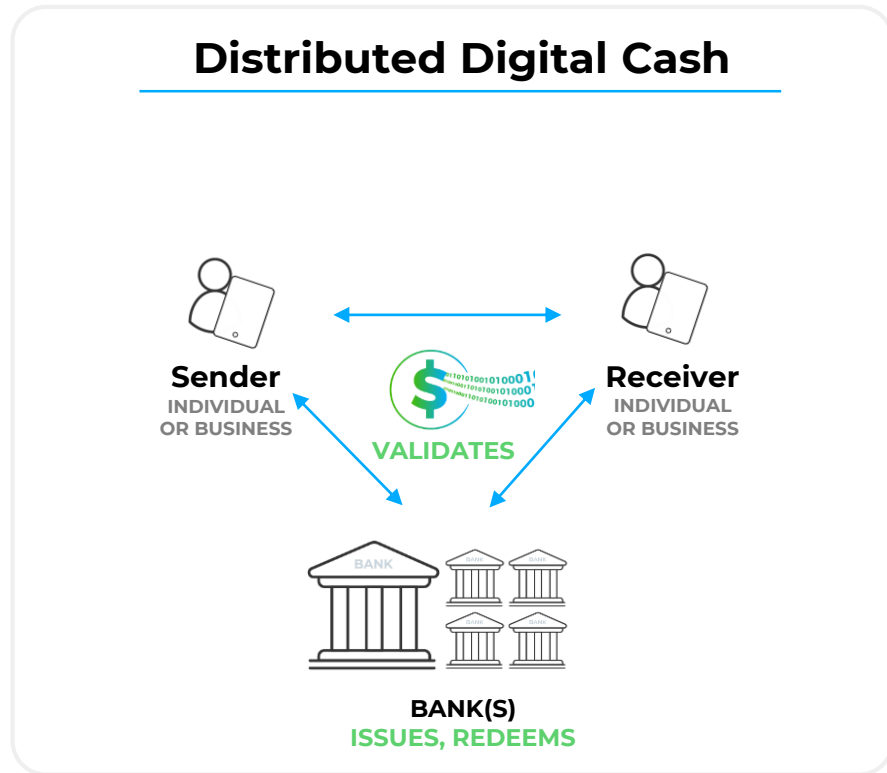
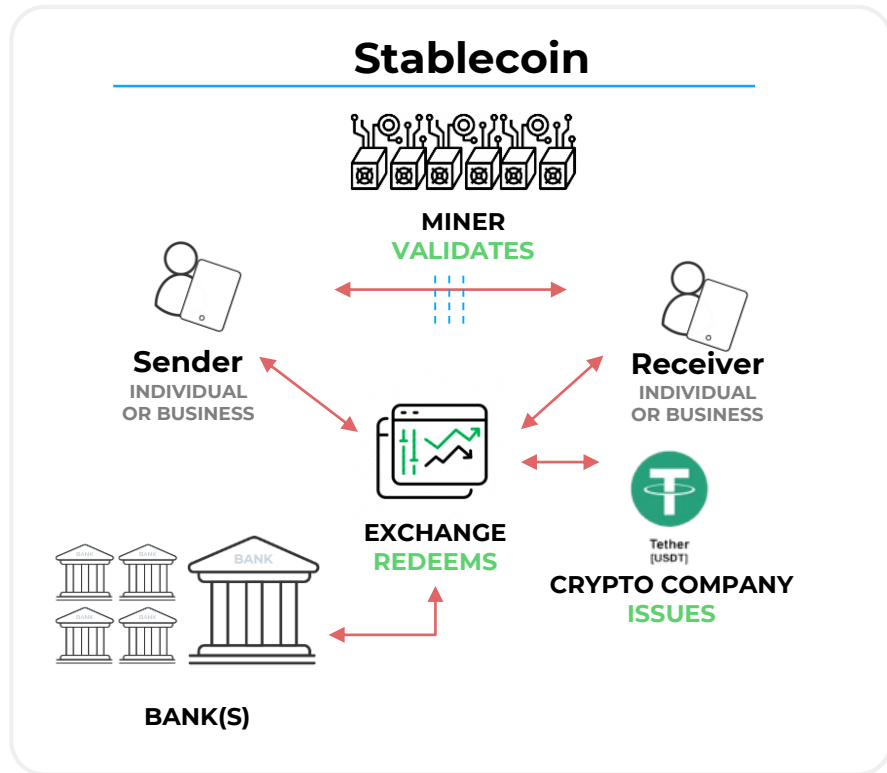
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## Stablecoins

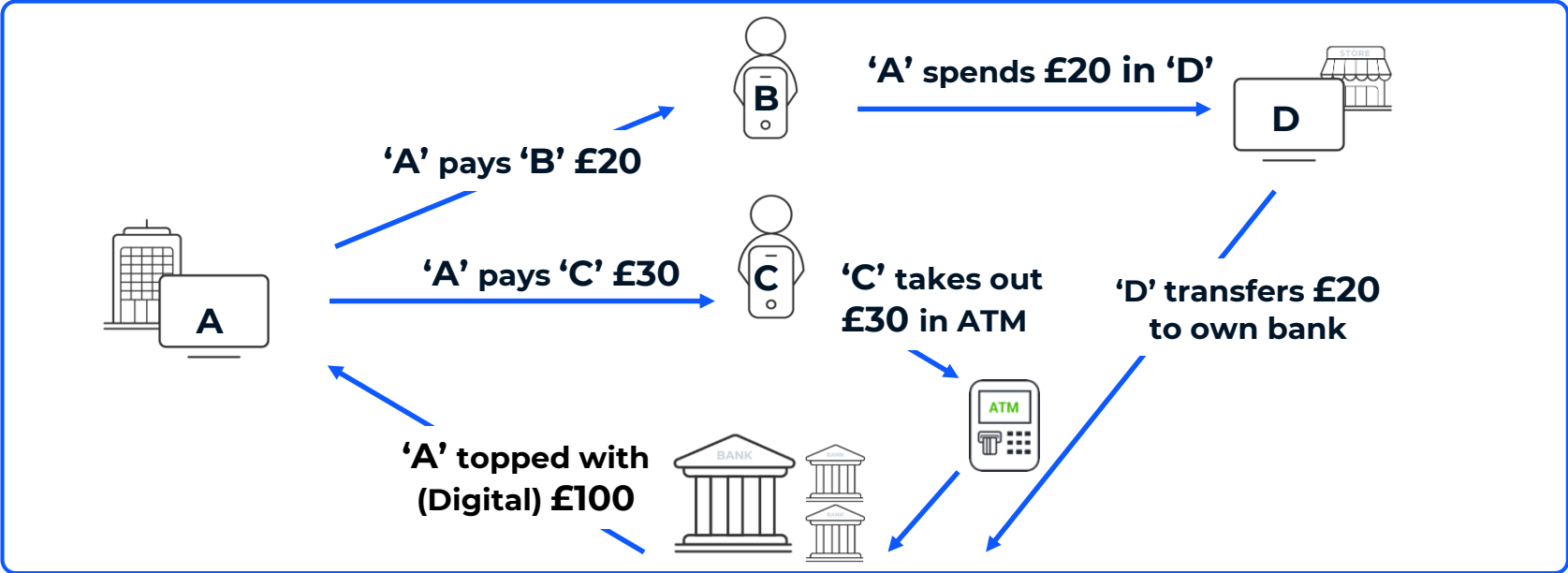
- Stablecoins are securities
- Value can fluctuate
- They are guaranteed by the company who issues them.

## How to create true Digital Cash?

# Our Architecture: Distributed Digital Cash



# How Funds Flow in a DDC Environment



Every User gets virtual IBAN

# Aspects of Architecture

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1

## **Ecosystem ready:**

Co-Mingling of funds from different DDC issuers (banks)

2

## **Scalable:**

Accounts (nodes) are lighter - only contain own history; able to fit on a mobile phone

3

## **Interconnectivity:**

Leverages existing ATMs & Card schemes; easier adoption as you don't know you are using encrypted funds

# Comparison

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## Stablecoins

- **Stablecoins are securities**
- **Value can fluctuate**
- **They are guaranteed by the company who issues them.**

## Distributed Digital Cash

- **DDC is cash (similar to pre-paid account)**
- **Value doesn't fluctuate**
- **Backing funds remain in bank**

**...and fulfills e-money directive  
2009/110/EC**



3



# Use Cases.

How We Have Helped Other Clients.

# "Gig" Payments Need Efficiency & *Engagement*

## Task economy



**TaskRabbit**

## Micro Work & Temp Work



## Trade & Consumer Payouts



Unilever



General Mills  
Making Food People Love



Procter & Gamble



Nestlé



## New Economy Payouts

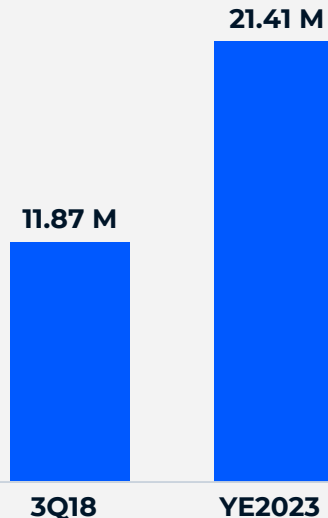


## IR&L (incentives, rewards & loyalty)



## Share of Gig Entrepreneurs in the US by Sector

(in Millions of People)



TOTAL REVENUE: **\$89 bn**      **\$180 bn**

Source: Kaiser Associates Research & Analysis, 2018

# Alternative Payments: \$300 bn (USA)



## ALTERNATIVE PAYMENTS

VOUCHERS, COUPONS, POINTS, CHECK,  
PRE-PAID CARDS

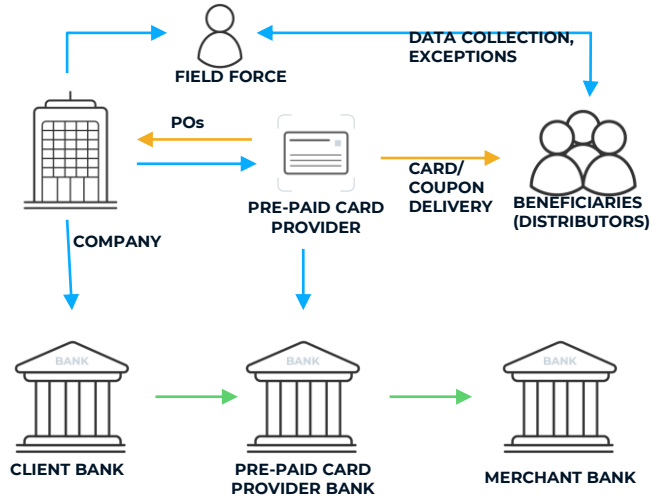
- Loss of control of funds
- Easily lost or stolen
- Poor data capture
- Hard to integrate journeys end-to-end

**£8 out of every £10 spent on voucher-like payments are wasted.**

# Problem: Corporate Incentive Payouts

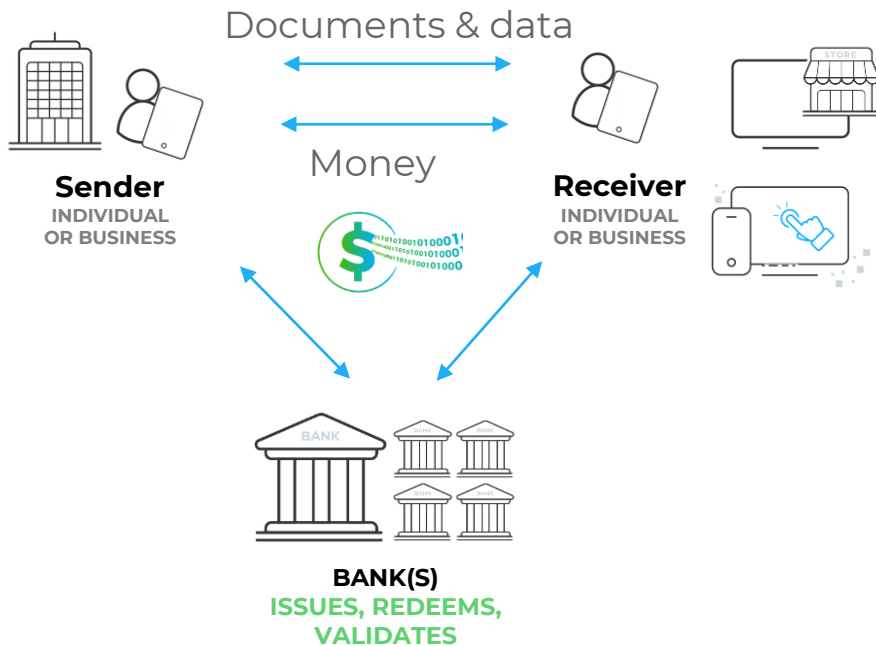
## FROM

Transfer funds to pre-paid card company and hassle to manage card distribution & exceptions; high breakage



23  
Processes

# DLT Digital Transformation: More than “payment”



## Businesses control

- **Innovation** - data & money
- **User Journeys** - nodes are tailored to each journey
- **Passwords** - in DLT, controlled by users (and not in a central database)

## Bank:

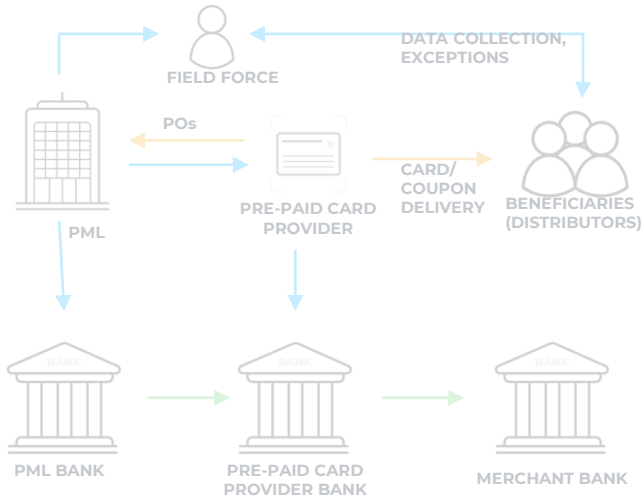
- **Controls governance** through parameters (e.g, KYC/AML)
- **Provide full connectivity** to ACH, SWIFT, and local infrastructure

# Results

23  
Processes

FROM

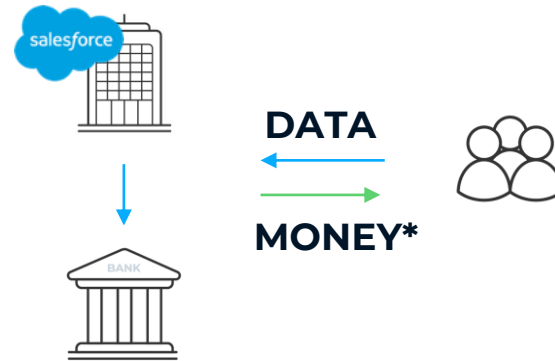
Separation of money & data  
(traditional technology - payouts  
by pre-paid card or voucher)



6 TO 8  
Processes

TO

Full control of money & data; new  
process with Task Triggers



\*with task trigger

# Solution: End-to-End Digital Journey



## Automation

### Payment panel

- Task triggers; campaign oriented
- Integration: Salesforce and ERP



## Engagement

### Collection panel

- Engagement - ability to manage points & cash



## Instant rewards

### Mobile Account

- Mobile centric journeys (Cash out at paypoints, or via bank transfers)



# Benefits

## FMCG CLIENT INCENTIVE PAYOUTS

Up to

**25%**

COST SAVINGS FROM  
STREAMLINING  
PROCESSES

Up to

**30%**

TIME SAVINGS  
FOR FIELD FORCE

**80%+**

REDUCTION OF  
UNSPENT BENEFITS

## INSURANCE CO INDEPENDENT AGENT INCENTIVES

**16%**

SALES  
INCREASE



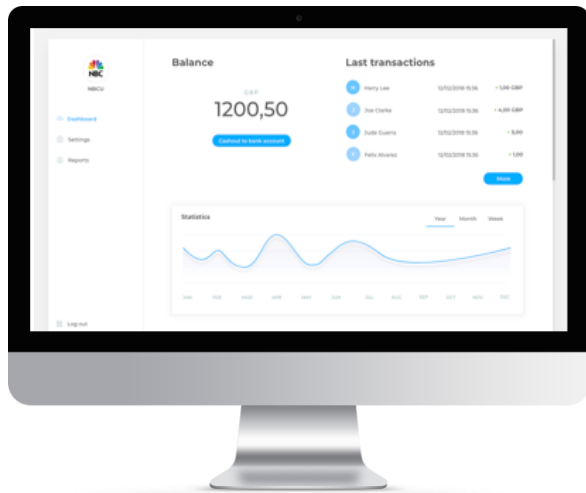
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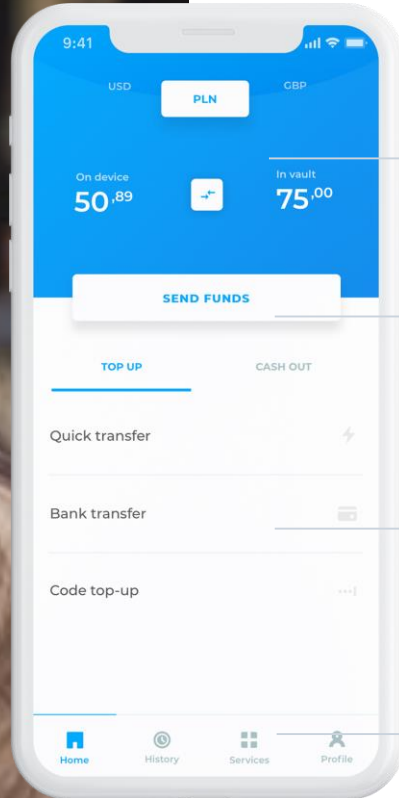
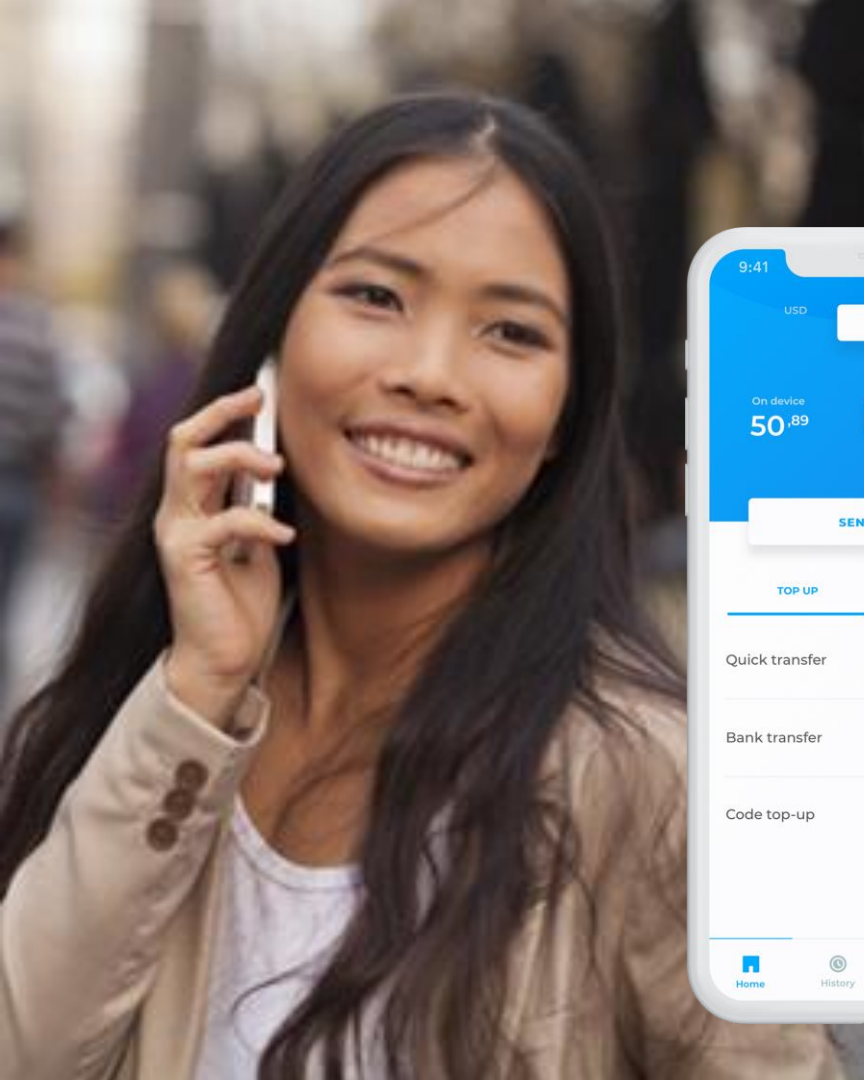
**What Other  
Use Cases?**



# eSports: Real-time Transactions Enriched with Fan Messaging



# Remittance



**Real time FX rates  
and conversions**

**Hold balances in multiple  
currencies**

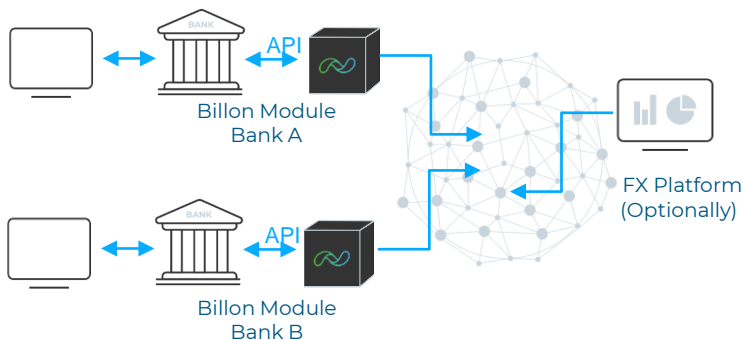
**Multiple termination  
options (cash, bank  
account, pre-paid card)**

**Send documents  
(invoices) with your  
payments**

# Other Applications of Digital Cash

## INTER AND INTRA-BANK TRANSFERS

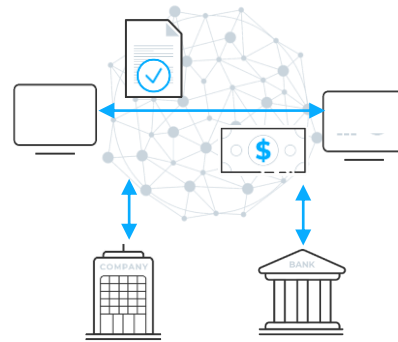
- Integrated to core banking system
- Direct transfers among Banks or Banks' clients
- Full traceability, near real time, 24/7/365



Partner : **FIS**

## DELIVERY VS PAYMENT

- Exchange of digitised cash vs digital asset or certificate (e.g. security, invoice)
- Exchange is part of one transaction, no settlement risk
- Programmable business logic triggers





# Closing Thoughts

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- **Must regulations change to fit crypto/ stablecoin business model?**

Or...

- **Are regulations correct?**  
**Should blockchain adapt to protect our money, documents, and personal information?**



# Thank you.



[david.putts@billongroup.com](mailto:david.putts@billongroup.com)

