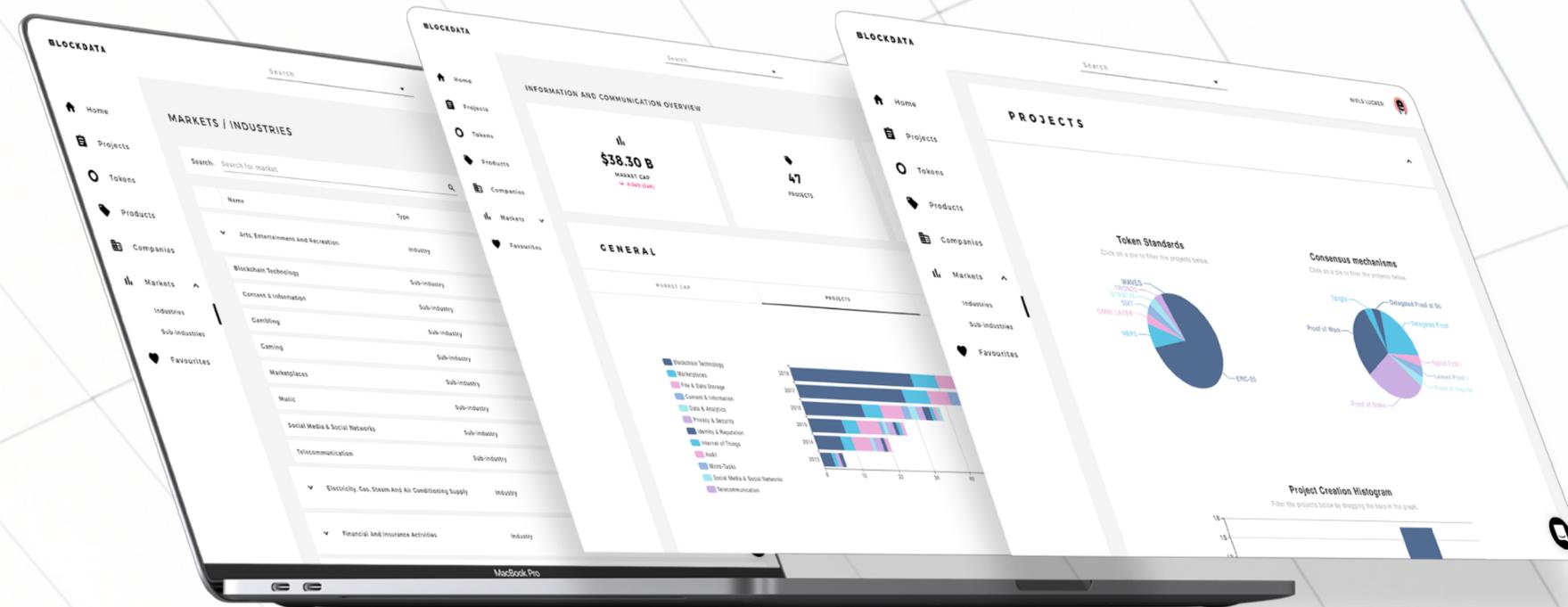


BLOCKDATA

Mapping the digital economy



Jonathan Knegtel
@jpknegtel
11-4-19

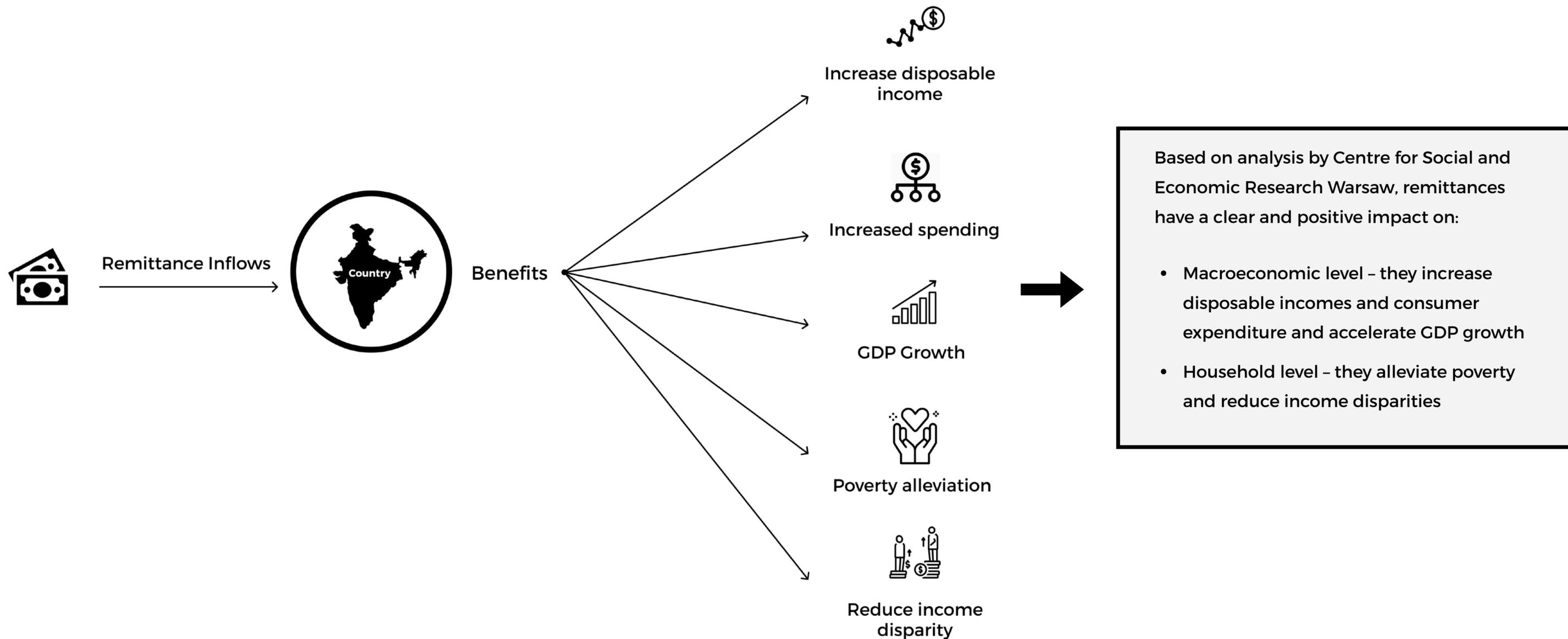
**Who am I?
Dutch
Amsterdam
Obsessed about the future**

BLOCKDATA

REMITTANCE MARKET & BLOCKCHAIN TECHNOLOGY

Blockchain's emerging role in a booming industry

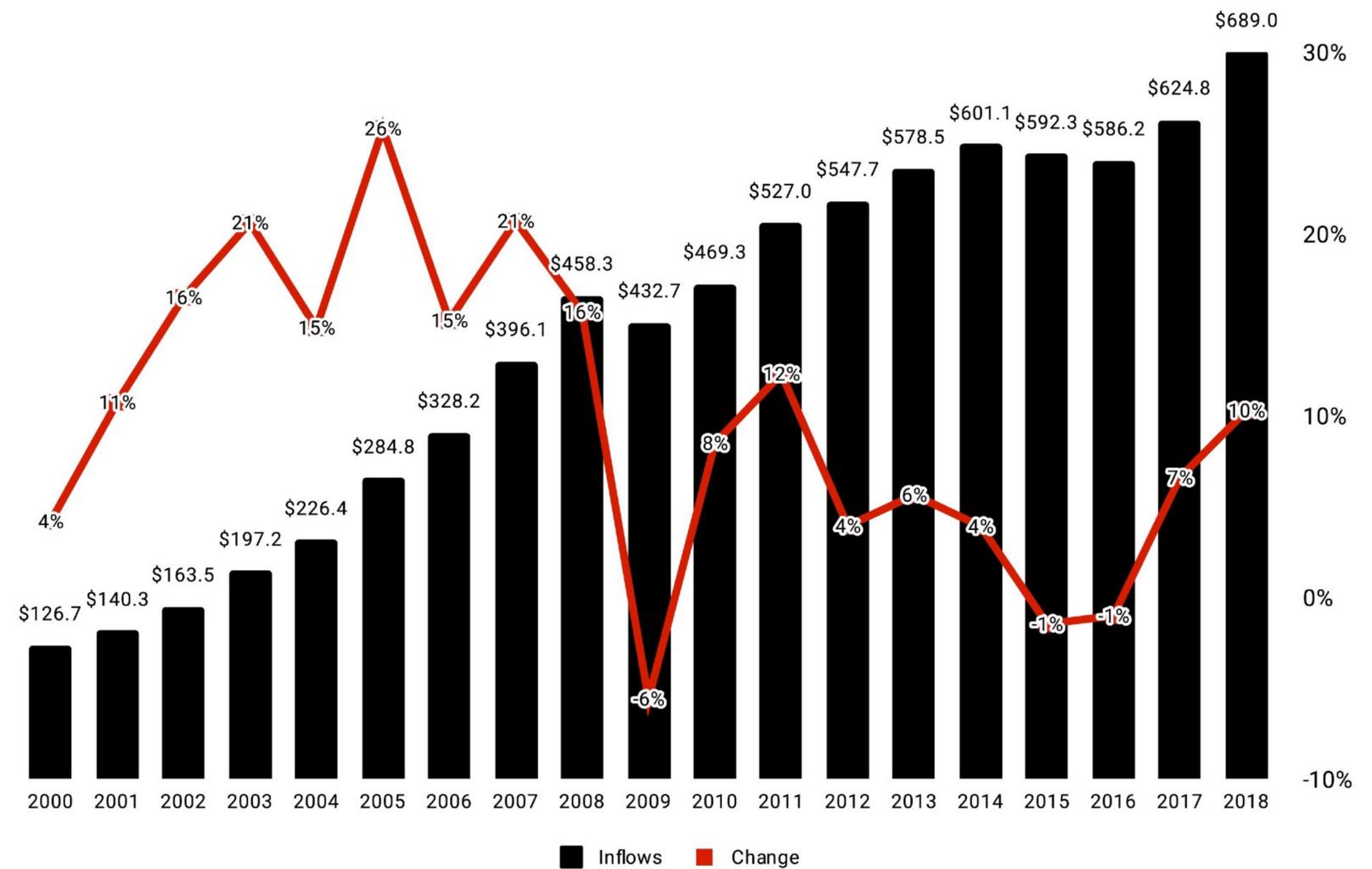
Remittances inflows have a positive impact on both social and economic growth



☐ The global remittance market grew by **10%** in 2018 alone - with a current valuation of **\$689 billion**.

- In 2018, overall global remittances grew 10% to US\$689 billion, including US\$528 billion to developing countries.
- Overall global remittance is expected to grow 3.7% to US\$715 billion in 2019, including US\$549 billion to developing nations. (World Bank, 2018)
- For some recipient countries, remittances can be as high as a third of their GDP.
- Blockchain solutions and businesses are developing but are still relatively small. Disruption can statistically meet the needs of over **3 billion people** in low income countries.
- Traditional cross-border money transfer market leaders own a significant portion of the market, allowing costs to remain high and service levels poor.

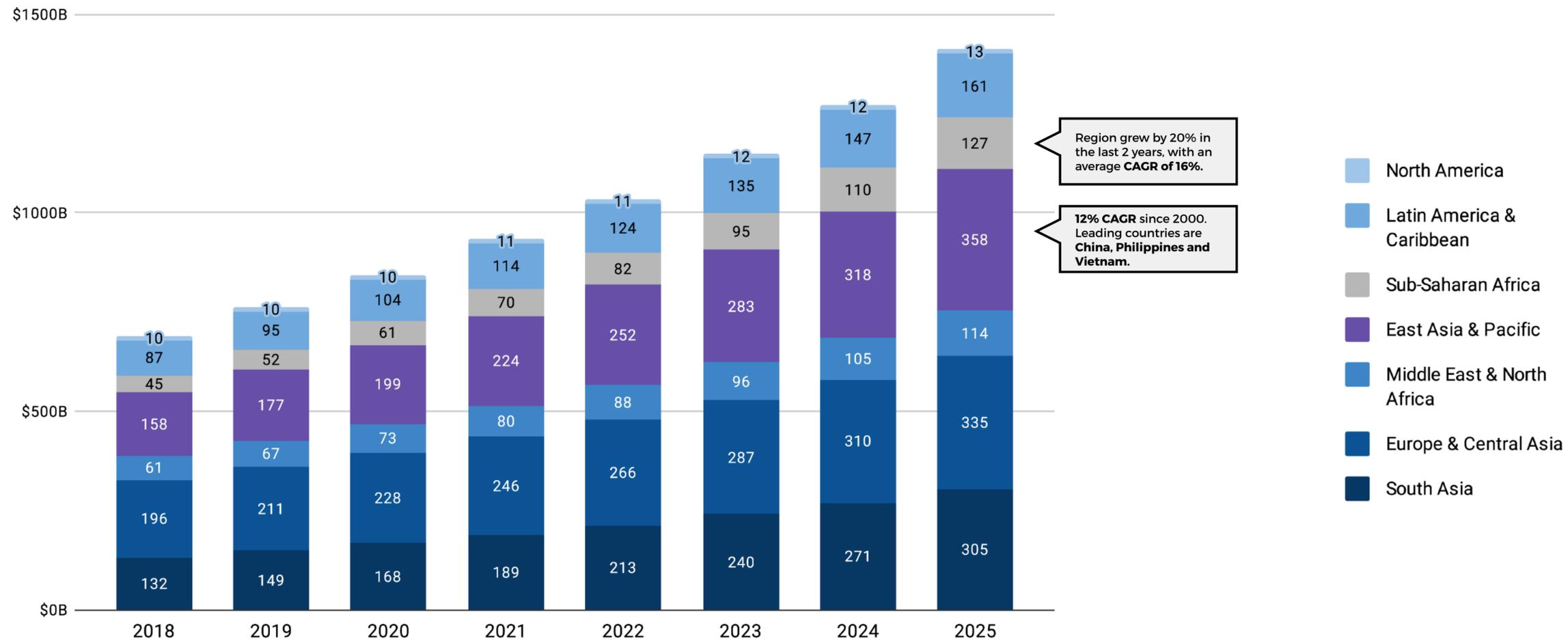
Global Cross-Border Money Transfer, 2000 to 2018
(In US\$ billions, year-over-year percentage change)



Sources: World Bank staff calculation based on data from IMF Balance of Payments Statistics database and data releases from central banks, national statistical agencies, and World Bank country desks. (Dec 2018)

☐ The global remittance market is projected to grow to **\$1.035 trillion by 2022** and **\$1.413 trillion by 2025**. Highest inflows will be in **East Asia & Pacific** & highest growth in **Sub-Saharan Africa**.

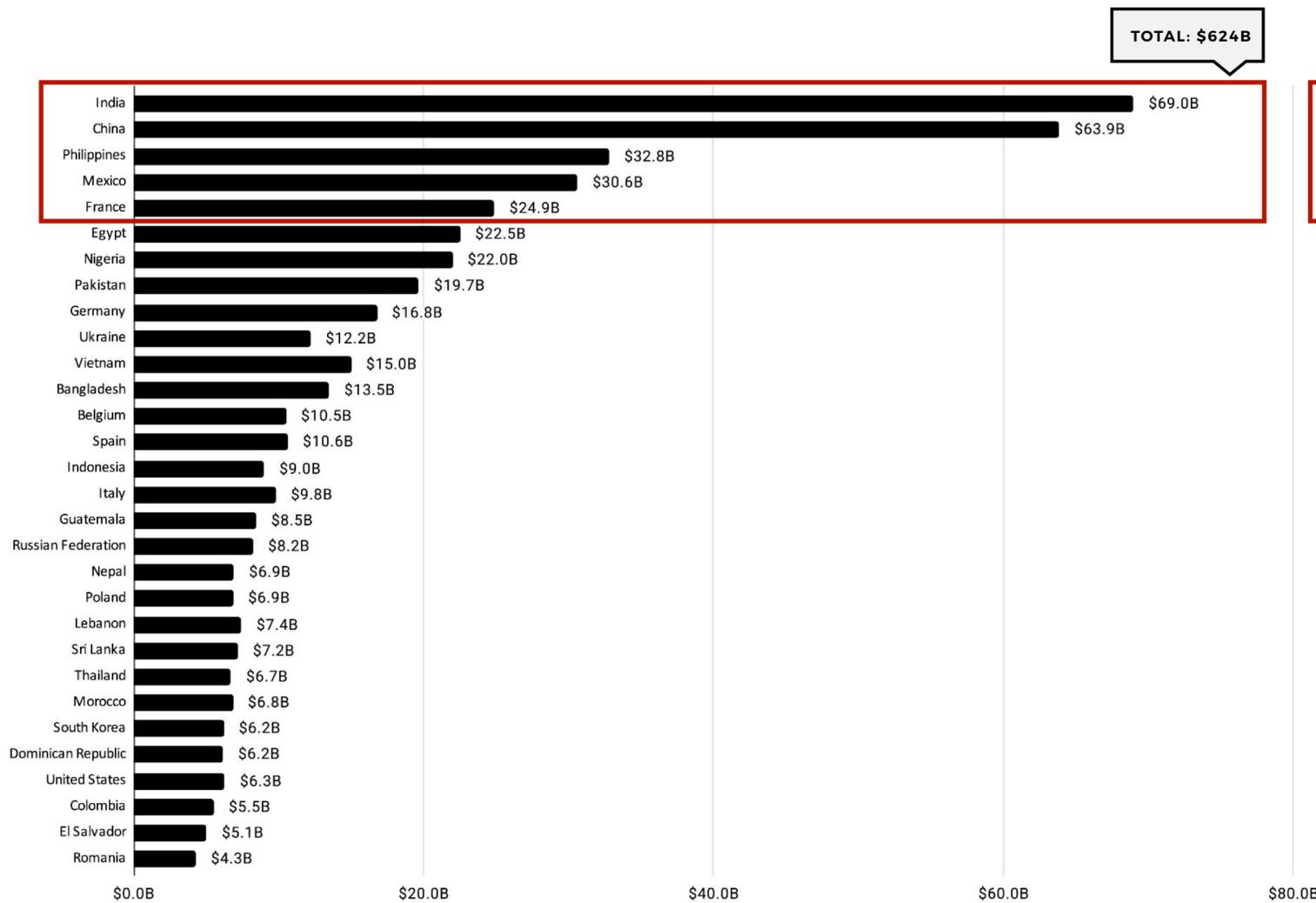
Forecast growth of global remittances market inflows, 2018 to 2025 (In US\$ billions)



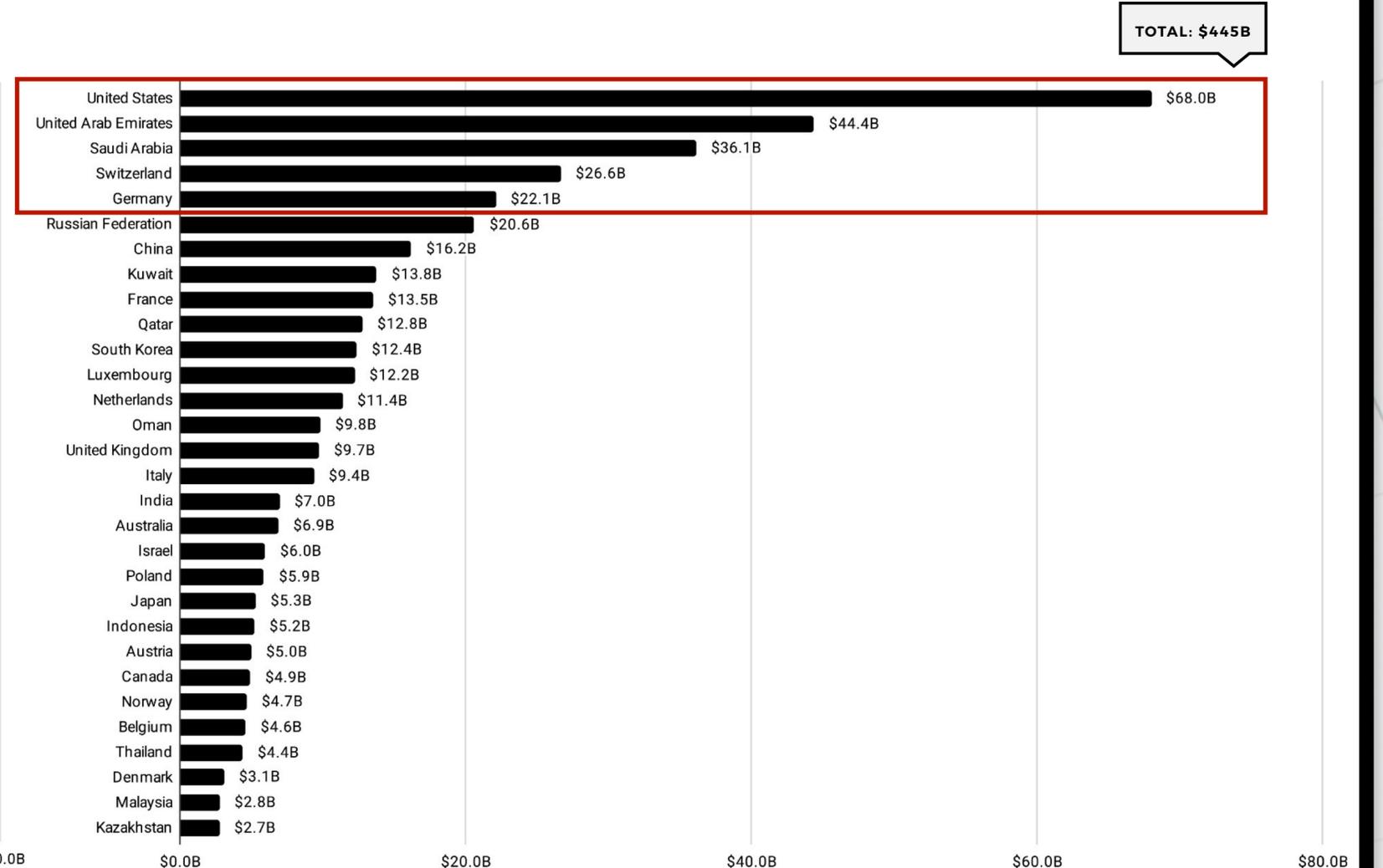
Sources: World Bank staff calculation based on data from IMF Balance of Payments Statistics database and data releases from central banks, national statistical agencies, and World Bank country desks. (Dec 2018)

India, China, Philippines, Mexico, & France made 35% of total remittance inflows in 2017; US, UAE, Saudi Arabia, Switzerland, & Germany made 44% of total outflows.

Top remittance-receiving countries (\$B) '17



Top remittance-sending countries (\$B) '17



Sources: World Bank staff calculation based on data from IMF Balance of Payments Statistics database and data releases from central banks, national statistical agencies, and World Bank country desks. (Dec 2018)

Notes: The charts show the analysis for 2017 since the World Bank does not have the 2018 data for remittance outflows.



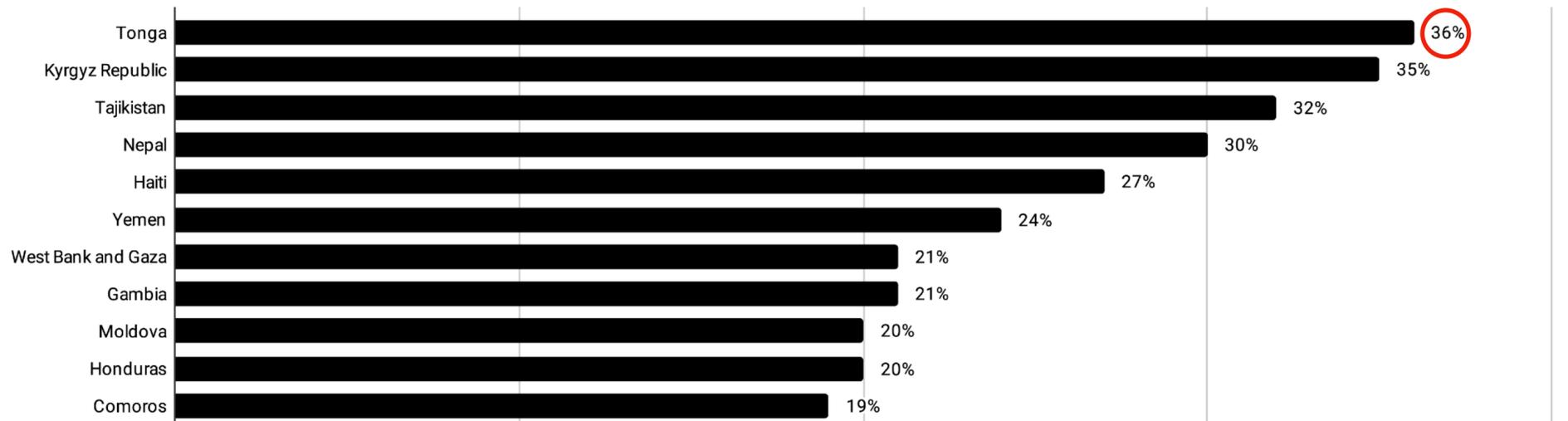
Countries in the **low and lower-middle income** range continue to heavily rely on remittances.

Remittance inflows as a share of GDP in *e2018 (%)

"For Tongans, a secure way to send money is priceless"
Impact at JFC



BY COUNTRY



BY REGION



BY INCOME LEVEL

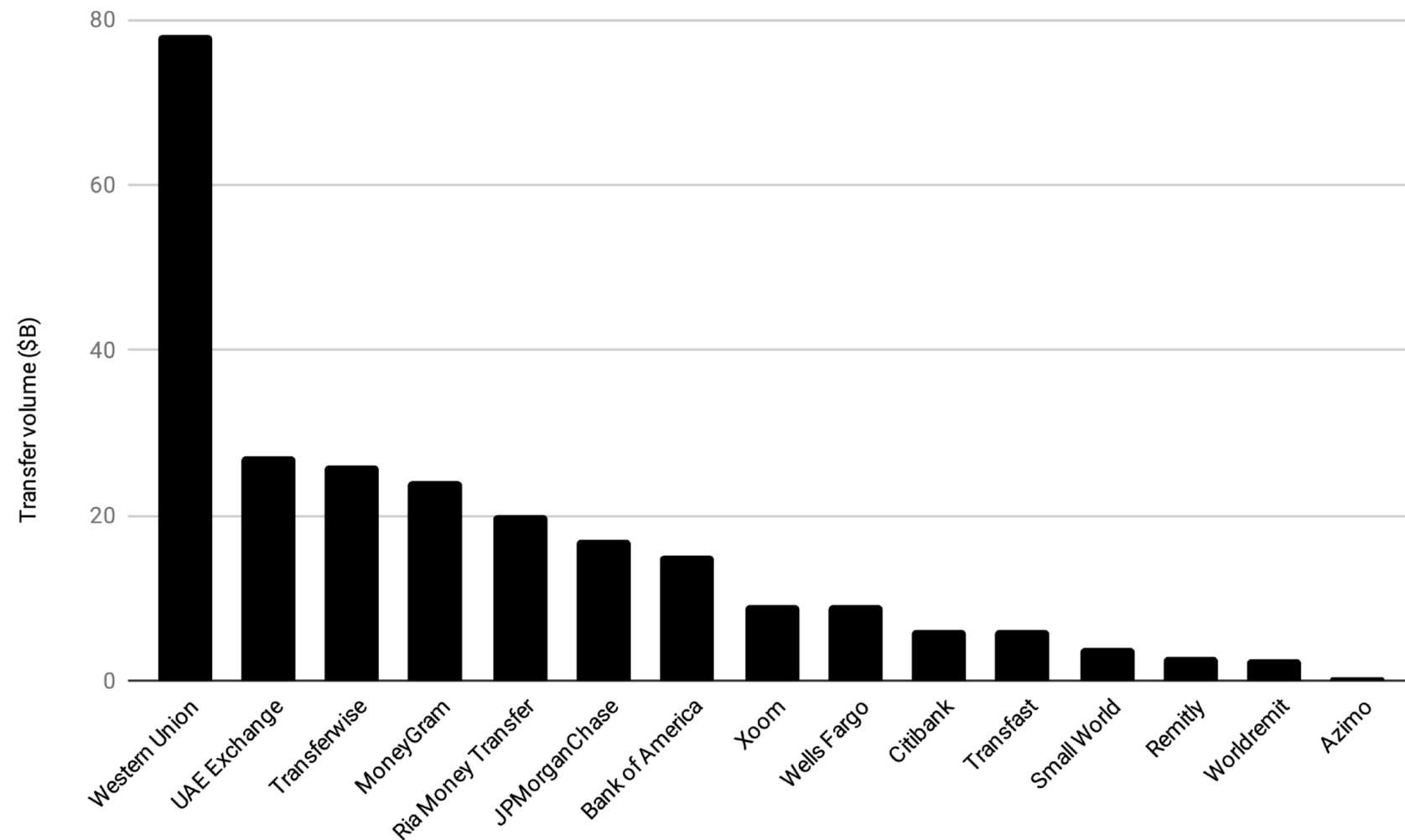


Sources: World Bank staff calculation based on data from IMF Balance of Payments Statistics database and data releases from central banks, national statistical agencies, and World Bank country desks. (Dec 2018)
Notes: *e2018 - expected 2018

Western Union dominates cross-border money transfers with **\$78 billion** annually.

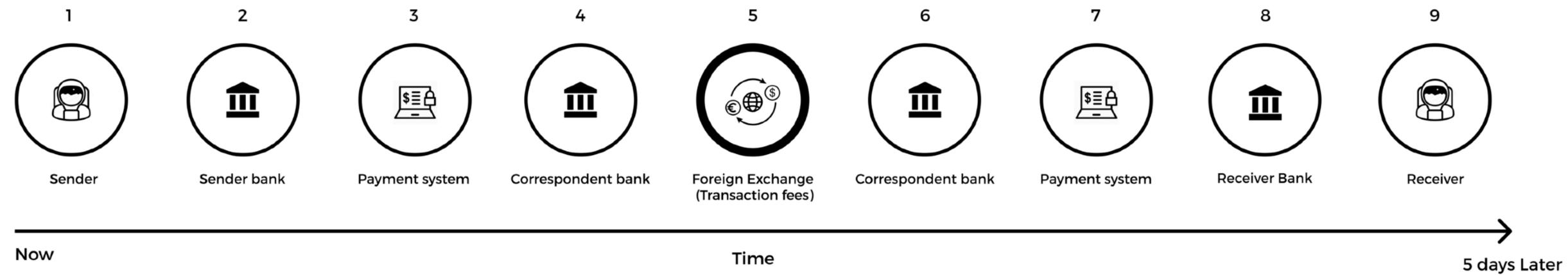
- Western Union operates in 200 countries, with over 500,000 agent locations.
- Western Union charges some of the highest commission rates out of all remittance intermediaries.
- Younger remittance businesses have yet to take the lead in cross-border money transfer volume.

Money transfer providers: x-border volumes in previous 12 months

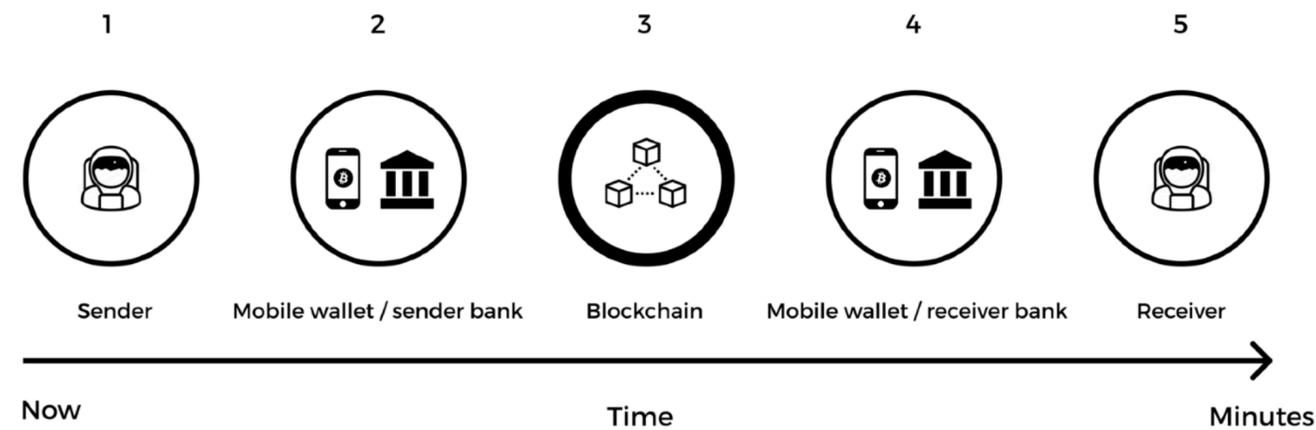


Blockchain technology solves multiple problems in the remittance industry, including **high fees**, **long transaction times** and the **abundance of intermediaries**.

ORIGINAL PROCESS



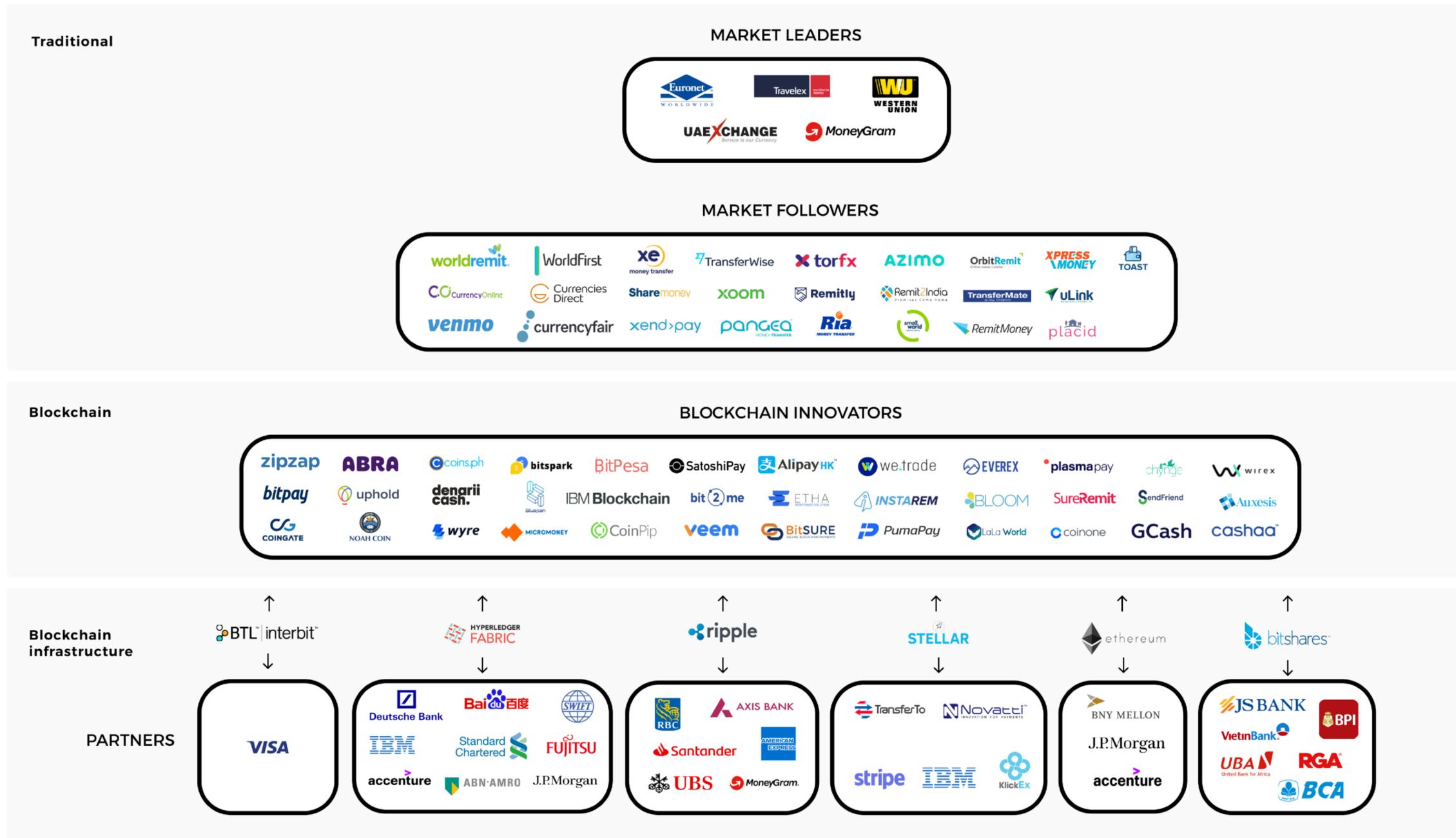
NEW PROCESS (BLOCKCHAIN)



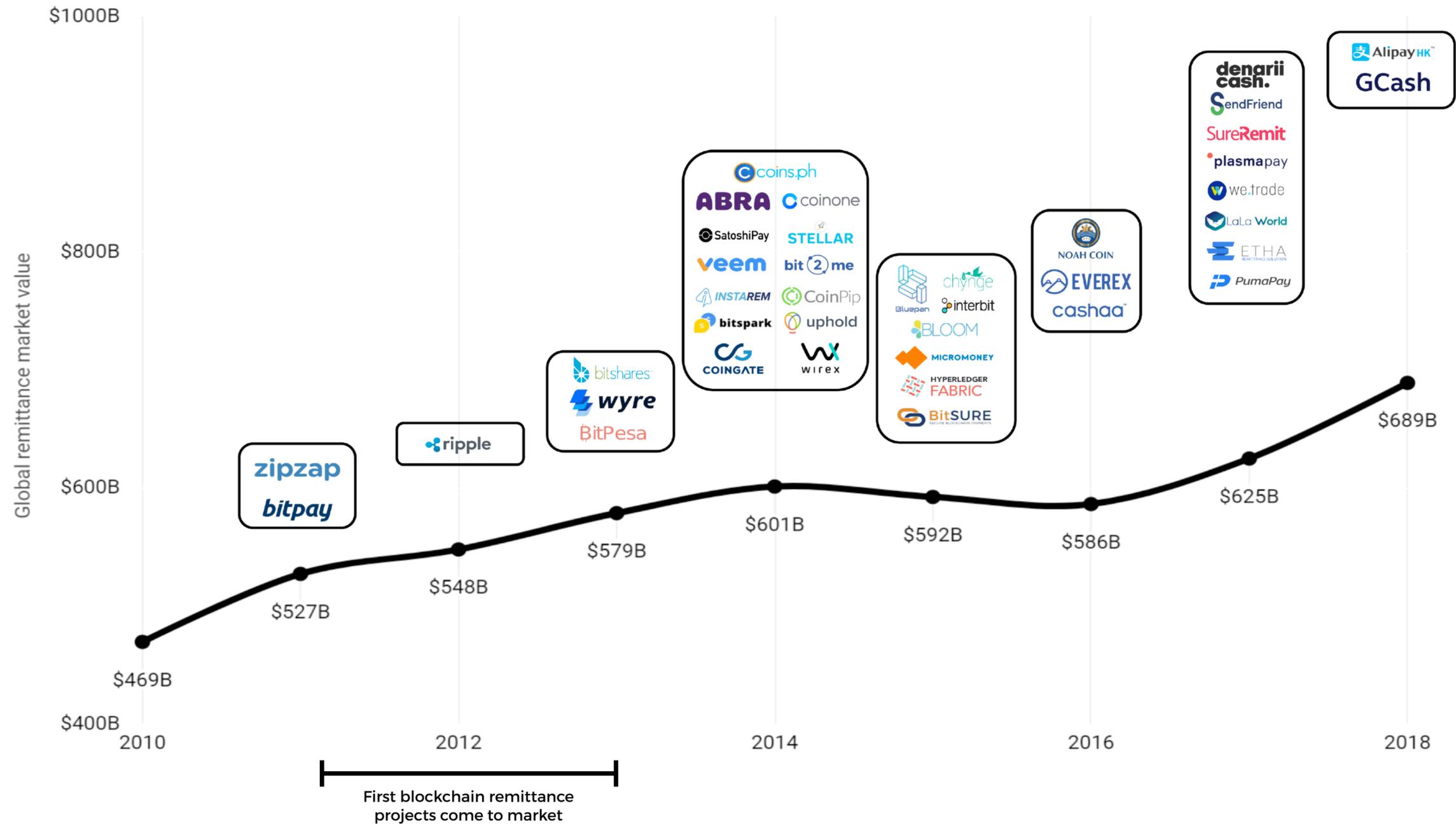


TRADITIONAL REMITTANCE SERVICES	VS	BLOCKCHAIN-BASED REMITTANCE SERVICES
Up to 1 hr to multiple days	 TRANSACTION TIME	Near-instant, up to 1 hour
High commission charges >5%	 COST	Low commission charges <1%
Unavailable around the clock (e.g. after 6pm) - (majority)	 ACCESSIBILITY	24/7 transfer service - (majority)
Central data storage Lost transactions	 SECURITY	Timestamped Traceable transactions Encrypted
Multiple channels Central banking system Agents / tellers	 TRANSFER	Instant settlement Agents / tellers
Fiat	 MEDIUM OF EXCHANGE	Multiple currencies (crypto & fiat)
Strong trust	 BRAND	Weak trust
Legacy banking (central infrastructure, manual involvement) SWIFT - international payment system	 TECHNOLOGY	Distributed ledger technology (permissioned & permissionless) Open-source Payment protocols & international payment network
Money transfer services FX Credit, bank, cash Billing Automated teller machines Mobile money transfer applications	 PRODUCT & SERVICES	Money transfer services FX Cryptocurrency wallets & storage devices Lending, micro-financing, & billing integration Payment protocols Crypto to FX tellers Stablecoins Mobile money transfer applications

Big corporations are looking to partner with blockchain startups to empower the evolution of remittances.



39 blockchain remittance projects were created in the last 9 years while the overall remittance market grew by **47%**.



While key players continue to dominate the traditional remittance market, smaller upstarts are achieving faster transfer speeds.

LOGO	COMPANIES	PRODUCT/SERVICES	FOUNDED	HQ	REVENUE	AVG. TRANSFER TIME (DAILY / HOURS)
	Western Union	Wire transfers, money orders, money transfers, bill pay, transfer tracking, price estimation	1856	USA	\$5.5 B	3-5 days 120
	XE Money Transfer	International money transfers. XE money Transfer, XE Currency App, XE Currency Data, XE Currency Converter	1993	Canada	\$12 M	1-5 days 120
	Travelex	FX, travelex money card / prepaid credit cards, global remittances	1976	UK	\$821 M	2-4 days 96
	MoneyGram	Money transfers, money orders, official check, bill payment services	1940	USA	\$1.1B	2-4 days 96
	Remitly	Remittance money transfer service, express, economy and transfer tracking	2011	USA	\$3 M	2-4 days 96
	XendPay	International money transfer, bill payments, transfer tracking	2012	UK	\$<1 M	1-4 days 96
	Ria Money Transfer	Remittance service, money transfers, transfer tracking	1987	USA	\$482 M	1-3 days 72
	TransferGo	Digital money transfers, mobile remittance app	2012	UK	\$1.8 M	1-3 days 72
	World First	International remittance service, world account, spot contracts, forward contracts, firm orders, API	2004	UK	\$111 M	1-3 days 72
	Xoom	Remittance money transfer, bill payments, money transfer app,	2001	USA	\$200 M	1-3 days 72
	InstaRem	International money transfer, transfer tracking, FX	2014	Singapore	\$1.5 M	1-3 days 72
	World Remit	International remittance services, mobile airtime top-up, mobile money accounts	2009	UK	\$79 M	1-3 days 72
	Transferwise	International money transfers, instant bank validation (IBV), Value+, Fastrack	2011	UK	\$154 M	1-2 days 48
	Transfast	International money transfer service, transfer tracking, money transfer app	1988	USA	\$35 M	Up to 1 day 24

Sources: Information has been collected directly from company websites, financial statements, annual accounts from DueDill and estimates from Owler



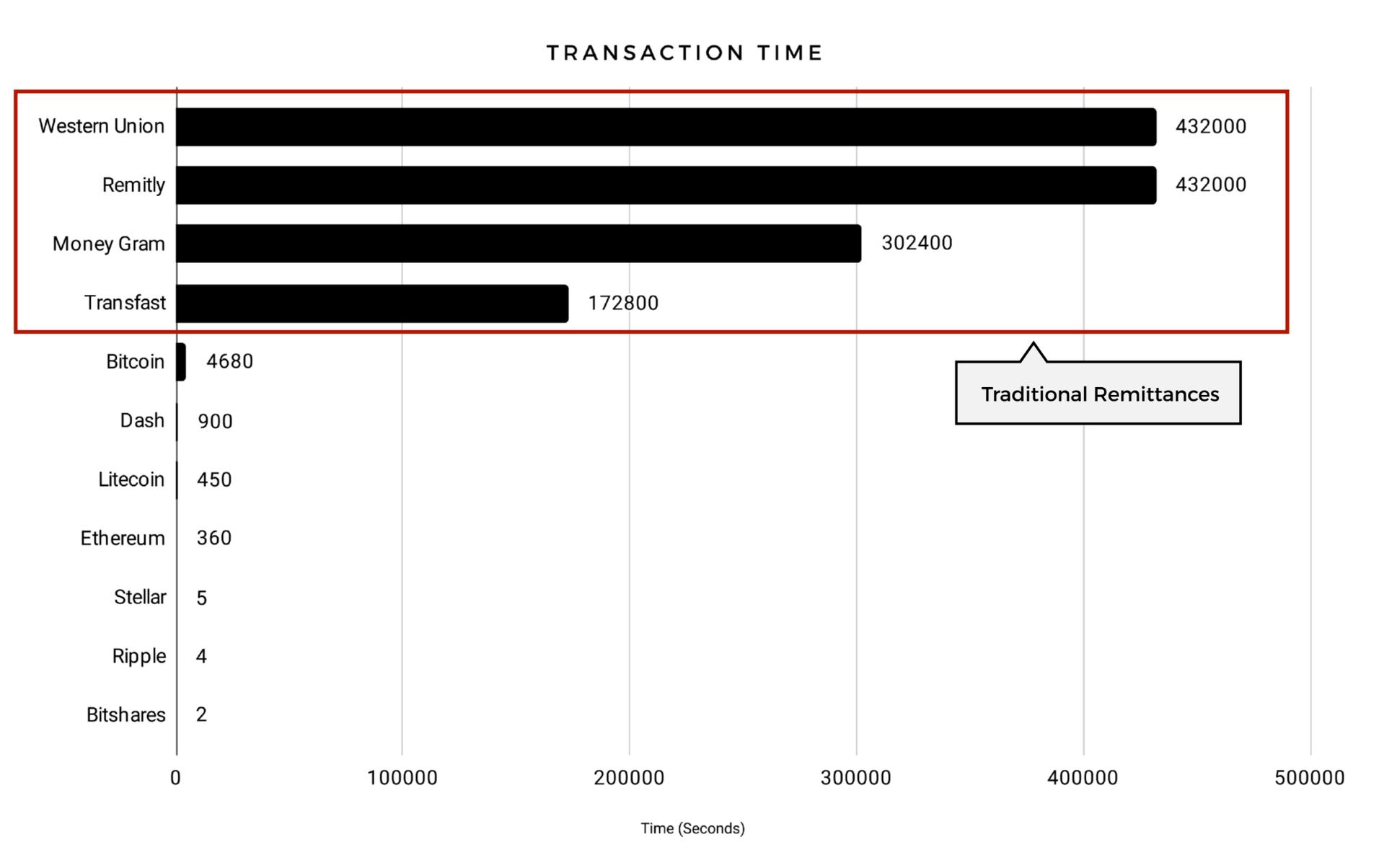
A number of companies are using blockchain to innovate remittances.

Core services include global settlement systems, payment & storage applications, lending, FX, & credit scoring.

LOGO	PROJECT	COMPANY	PRODUCT/SERVICES	FOUNDED	HQ	TEAM SIZE	FUNDS RAISED
	PumaPay	Decentralized Vision Ltd.	Cryptobilling and mobile app wallet, payment protocol, money transfer network	2017	Cyprus	~30	\$117 M
	Ripple	Ripple Labs, Inc.	RippleNET, gross-settlement system, payment protocol, currency exchange	2012	USA	~150	\$93.6 M
	BitPay	BitPay, Inc.	Payment platform, cryptocurrency wallet, billing, card	2011	USA	~80	\$72.5 M
	Veem	Veem, Inc.	Payment service provider, invoicing, FX to crypto currency coverter	2014	USA	~100	\$69.3 M
	Abra	Plutus Financial Inc.	Cryptocurrency wallet and exchange, remittance service provider	2014	USA	~40	\$35.5 M
	Everex	EVX Holdings, Pte. Ltd.	FX and lending service, mpayments, stable coin, remit payment service	2016	Singapore	~20	\$26.5 M
	BitPesa	BitPesa Ltd.	Currency exchange, payment platform, remittance service provider	2013	Kenya	~70	\$15 M
	Coins.ph	Betur Inc. (acquired by Go-Jek)	Mobile bitcoin wallet app for remittances, crypto wallet	2014	Phillipines	~100	\$10 M
	Uphold	Uphold Inc.	Cryptocurrency wallet, money transfer service, investment platform	2014	UK	~70	\$8.2 M
	Micromoney	Platinum Company Ltd.	Micro-financing, lending payment service provider.	2015	Singapore	~150	\$6.8 M
	Wyre	Wyre, Inc.	Payments and compliance API, money transfer service, FX	2013	USA	~20	\$6.2 M
	Stellar	Stellar Labs Inc.	Payment protocol, public infrastructure technology	2014	USA	~20	\$3 M
	Bloom	Bloom Technologies Pte. Ltd.	Credit scoring platform, BloomX, service, payment solutions provider	2015	Singapore	~15	\$0.05 M
	BitSpark	Bitspark Ltd.	Money transfer platform, trading engine, currency exchange	2014	Hong Kong	~15	\$0.04 M
	CoinPip	CoinPip Pte. Ltd.	Blockchain remittance payment rail, money transfer platform	2014	Singapore	~10	\$0.01 M
	Coingate	UAB Virtualios Valiutos.	Payment API, PoS app, e-commerce plug-ins	2014	Lithuania	~15	-
	Denarii Cash	Searchfuse Marketing Management Ltd.	Cryptocurrency and payment wallet, money transfer service	2017	UAE	~10	-
	BluePan	BluepanNet, Inc.	Remittance transfer service, payment solutions provider	2015	South Korea	~10	-

E Blockchain based transactions are on average **388** times faster and **127** times cheaper.

 COMPANIES	 TRANSACTION TIME	 FEES (\$)
	3-5 days	9.7
	3-5 days	2.7
	4-5 days	9.7
	2-4 days	0.8
	1.3 hours	0.37
	15 mins	0.02
	7.5 mins	0.03
	6 mins	0.09
	5 secs	<0.01
	4 secs	<0.01
	2 secs	0.04



Sources: World Bank Data; [bitinfocharts](#)
 Notes: The data is based on transactions from United States to foreign countries. Excluding cash, debit/credit card transfer.

EXECUTIVE SUMMARY

- The global remittance market is projected to grow to **\$1.035 trillion** by 2022 and **\$1.413 trillion** by 2025. Highest inflows will be in East Asia & Pacific and highest growth in South Asia.
- **39 blockchain** remittances companies were created in the last 9 years while the overall remittance **market grew by 47%**.
- Big corporations are looking to **partner with blockchain startups** to empower the evolution of remittances.
- A number of companies are using blockchain to **innovate remittances**. Core services include global-settlement systems, multi-use payment and storage applications, crypto billing, lending, FX transfer, and credit scoring.
- Blockchain based transactions are on average **388** times faster and **127** times cheaper than traditional remittances.

BLOCKDATA

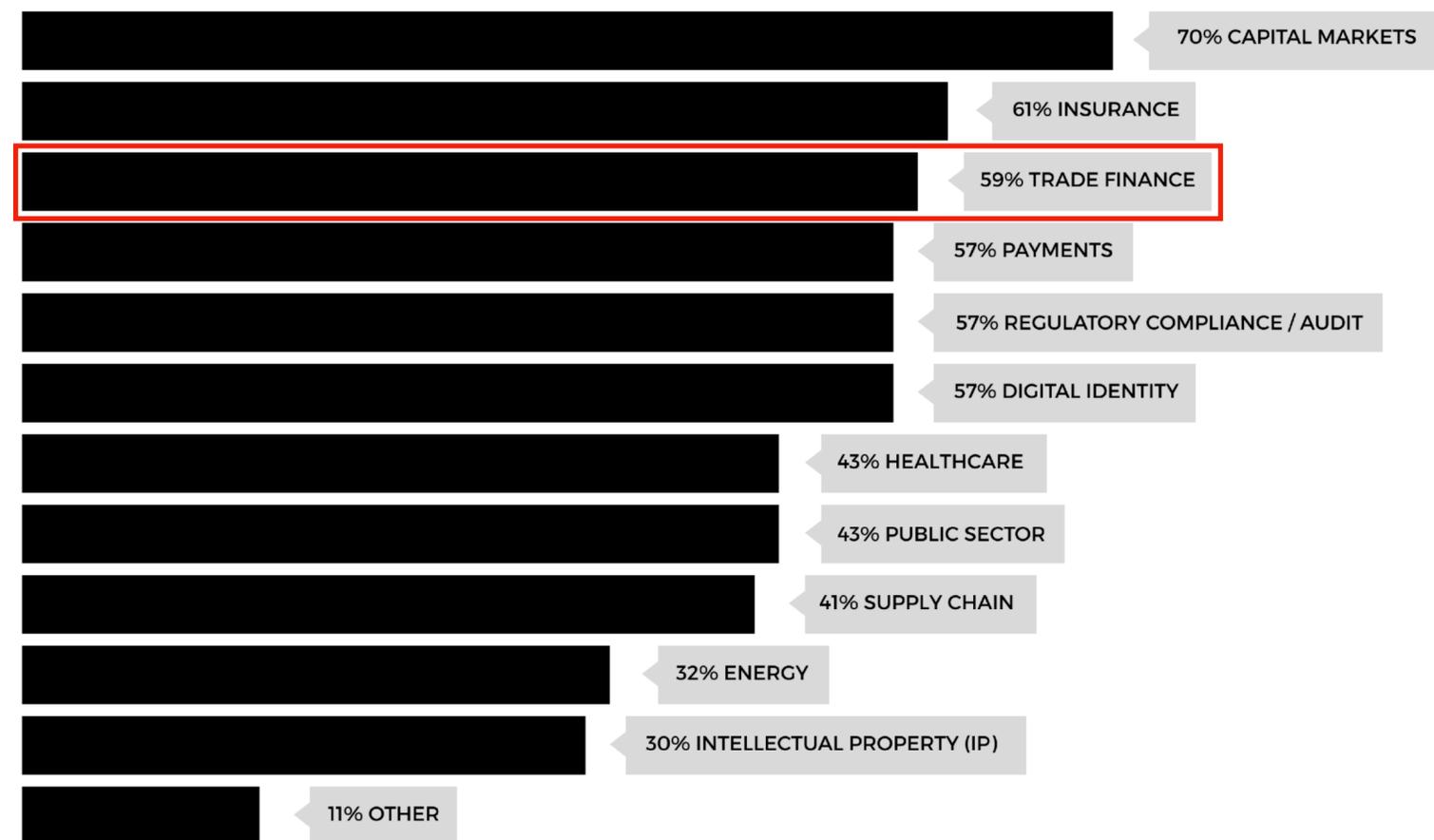
TRADE FINANCE & BLOCKCHAIN

Closing the \$1.5 trillion gap

E Within banking & finance, trade finance is the 3rd most targeted sector for DLT use

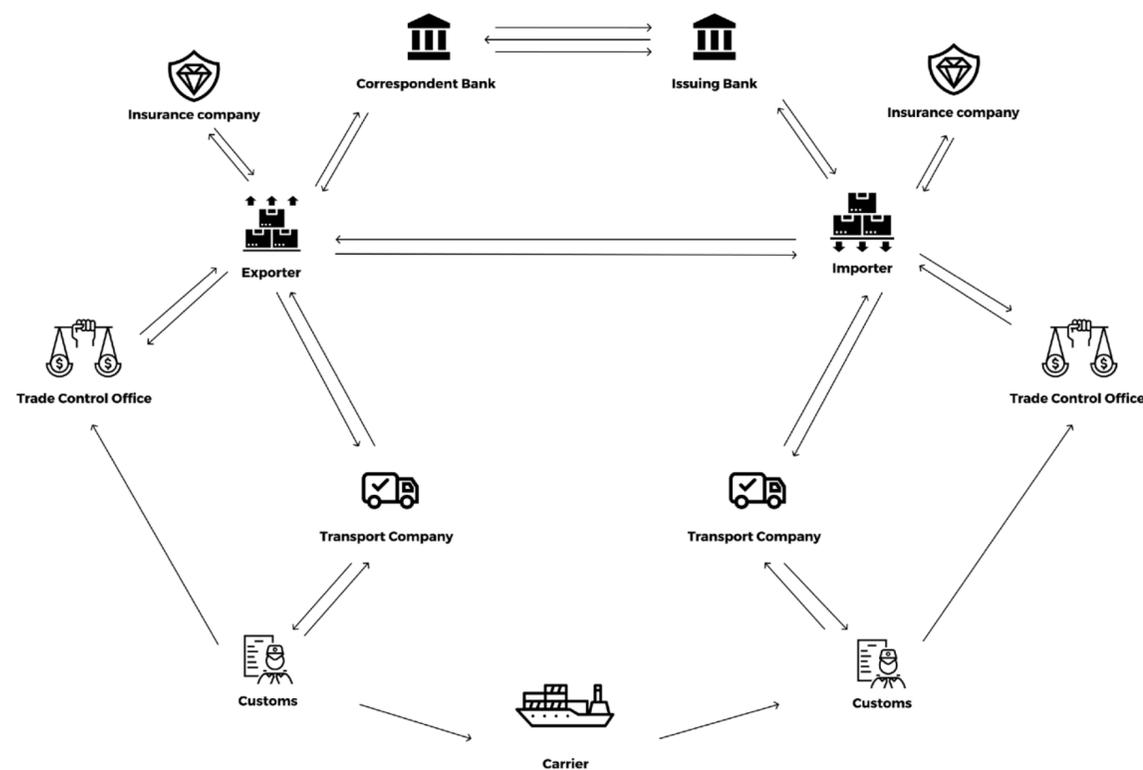
- Trade finance describes the processes involved in financing domestic and international trade. It involves numerous actors, including importers, exporters, banks, carriers, customs officials, and insurers.
- Trade finance is heavily reliant on paper documentation. Its complex legacy processes have made it difficult to digitize and modernize.
- Through automating this legacy documentation process, blockchain can streamline trade finance, leading to an increase in trade volume by \$1.1 trillion.

% OF DLT SERVICE PROVIDERS TARGETING DIFFERENT SECTORS/USE CASES

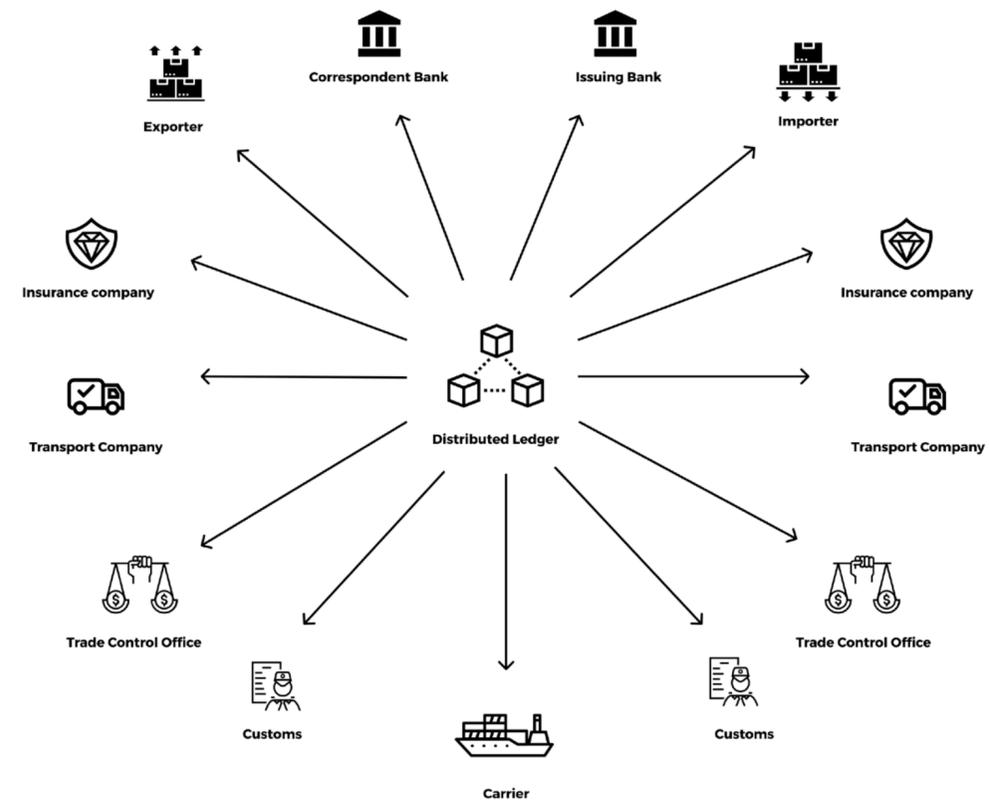


E Distributed ledger technology and blockchain could increase global trade volumes by **\$1.1 trillion by 2026**, off the current base of \$16 trillion. - Bain & Company & HSBC, 2018

TRADITIONAL TRADE FINANCE



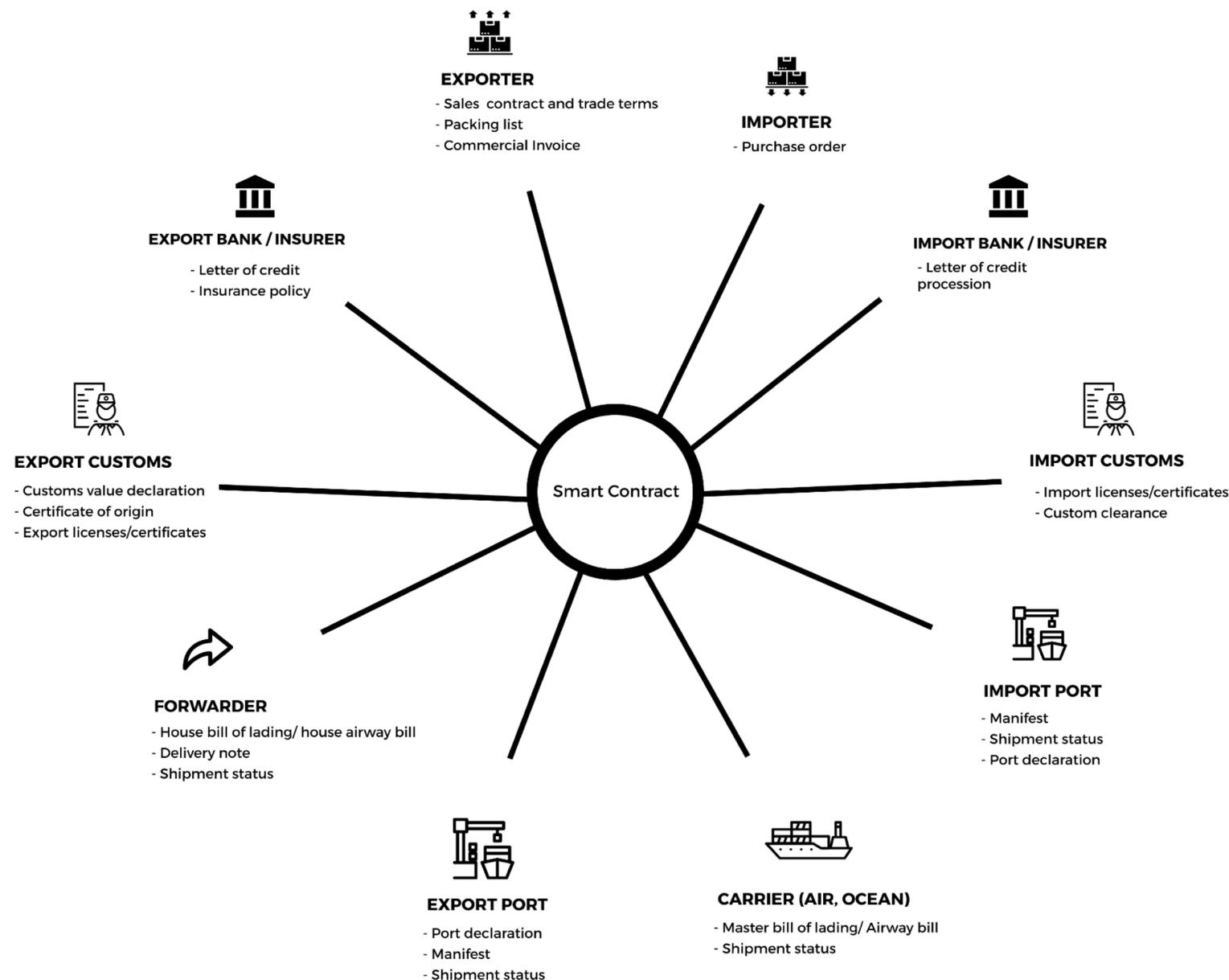
NEW DLT TRADE FINANCE



☐ Distributed ledger technology **reduces fraud and cuts verification time from 1-2 weeks to 24 hours** via smart contracts

Trade finance is still paper-based and heavily reliant on manually checking documents.

- 10-20 documents change hands between 20 parties, creating 5,000 data field interactions
- **90%** of interactions are 'ignore/transmit to next party'
- Document approval can take 1-2 weeks from initial contact to final payment
- Immutable data eliminates need for manual verification
- Reduced risk of fraud or human error
- **35% reduction in costs**



5 major consortia are working to close the \$1.5 trillion-dollar supply-demand gap in global trade finance

VOLTRON

BLOCKCHAIN INFRASTRUCTURE

c.rda

PROJECT LEAD

r3 **CryptoBLK**

MEMBERS

BNP PARIBAS HSBC
 INTESA SANPAOLO ING
 Bangkok Bank SEB
 Scotiabank NatWest
 CTBC BANK BBVA
 usbank MIZUHO

MARKET CAP
\$579 B

MarcoPolo

BLOCKCHAIN INFRASTRUCTURE

c.rda

PROJECT LEAD

r3 **TRADEIX**

MEMBERS

Bangkok Bank DNB NatWest
 NATIXIS BNP PARIBAS
 SMBC COMMERZBANK
 ING OP-Pohjola ANGLO-GULF
 Standard Chartered Danske Bank
 Alfa-Bank LB=WB

MARKET CAP
\$322 B

we.trade

BLOCKCHAIN INFRASTRUCTURE

HYPERLEDGER FABRIC

PROJECT LEAD

IBM

MEMBERS

SOCIETE GENERALE UniCredit
 HSBC Deutsche Bank
 UBS CaixaBank
 Rabobank Santander
 NATIXIS Eurobank EFG
 ERSTE Group Nordea KBC

MARKET CAP
\$488.7 B

eTrade Connect

BLOCKCHAIN INFRASTRUCTURE

HYPERLEDGER FABRIC

PROJECT LEAD

HONG KONG MONETARY AUTHORITY
香港金融管理局

MEMBERS

上海商業銀行 中国农业銀行
SHANGHAI COMMERCIAL BANK 香港分行 AGRICULTURAL BANK OF CHINA
 ICBC 工銀亞洲 HSBC
 交通銀行 ANZ
 BANK OF COMMUNICATIONS
 Standard Chartered 中國銀行
 BANK OF CHINA
 恒生銀行 DBS
 HANG SENG BANK
 BEA 東亞銀行 BNP PARIBAS

MARKET CAP
\$1128.8 B

komgo

BLOCKCHAIN INFRASTRUCTURE

Quorum

PROJECT LEAD

komgo **CONSENSYS**

MEMBERS

ABN-AMRO BNP PARIBAS
 SOCIETE GENERALE CRÉDIT AGRICOLE SGS
 NATIXIS MERCURIA
 MACQUARIE MUFG
 Rabobank ING
 citi KOCH G

MARKET CAP
\$467.4 B

Other consortia tackling issues in trade finance

India Trade Connect

USE CASE

Blockchain-based solution for banking trade finance. **Bill collection, letters of credit, trade transactions, invoice financing**

PROJECT LEAD



MEMBERS



World Blockchain Trade Consortium

USE CASE

Invoice checking, fraud mitigation, double-financing. a blockchain application developed by Trade Finance Market (TFM)

PROJECT LEAD



MEMBERS

To be announced...

Interswitch

USE CASE

To develop a blockchain-powered supply-chain finance solution **in Nigeria**

PROJECT LEAD



MEMBERS



TradeLens

USE CASE

To create trust and transparency across the global supply chain. **Transportation management systems, shipment tracking, permission-based sharing**

PROJECT LEAD



MEMBERS



Products are being built on Corda to tackle every aspect of trade finance

	PRODUCT	PROJECT LEAD	HQ	USE CASE	LAUNCH DATE	DEVELOPMENT STATUS
	MonetaGo	MonetaGo	US	Fraud mitigation, supply chain finance (factoring, receivables) and corporate issuance (certificates of deposits)	March, 2018	LIVE (moving to Corda from HyperLedger Fabric)
	B2P for procure-to-pay	Digital Ventures, (capital arm of SCB)	Thailand	Procurement, invoicing, supply chain management, ERP integration, Tracking (status of approval & payments), e-Tax	Tbd	In Development
	Everchain	S-Labs	China	Financial asset transactions, digital credit records, data upload, inquiry, chain management, payments, asset issuance	Tbd	In Development
	ChainNova Shipping Trade Finance Platform	ChainNova	China	Documentation digitisation (Letter of credit, bill of lading), invoice traceability, electronic messaging transmission	Tbd	In Development
	Decentralized Procurement Platform	Digiledge	India	Audit trail, smart contract automation, data ownership, payment approval, invoicing, purchase ordering	Tbd	In Development
	Invoice Discounting Platform	Digiledge	India	Invoice factoring, audit trail, smart contract automation, (integration with legacy credit scoring & ERPs)	Tbd	In Development
	Letter of Credit	R3 (Corda)	US	Letter of credit	Tbd	In Development
	Persistent Systems Trade Ledger	Persistent Systems	India	Audit trail, bill of lading, invoicing, document verification	Tbd	In Development
	Phlo	Satoshi Systems	UK	Tracking, Letter of Credit, Bill of Lading, other document digitisation, supply chain provenance and trade automation	Tbd	In Development
	VaultChain	Tradewind Markets	US	Digital trading, settlement and ownership solutions for precious metals, tradewind platform integration	March, 2018	LIVE
	x-DeFraud	Kratos Innovation Labs	Singapore	Digitization of trade cycle documents (via smart contracts), fraud mitigation, tracking of inventory	Tbd	In Development

Features and USPs of blockchain projects in trade finance

	Letter of Credit	Insurance	Permits	Invoicing	Certificate of Origin	Bill of Lading	Payments	Sales Agreement	Packing List	Financing	Tracking
 TANGO TRADE	★ USP		✓	✓	✓	✓	✓		✓	✓	✓
 skuchain	✓	✓		✓	✓					✓	✓
 Gatechain	✓	✓			✓	✓	✓				
 TradeFinex <small>Powered by XDC Protocol</small>	✓			✓		✓	✓	✓		✓	✓
 citrusxchange	✓			✓				✓		★ USP	
 CargoX						★ USP					
 ZERO1										★ USP	
 Hijro							★ USP				
 TRADELINE	✓			✓	✓	✓	✓		✓		✓
 OweMe							★ USP				

★
USP
UNIQUE SELLING POINT

✓
FEATURE

**Who thinks blockchain
is the future?**

News flash:
Blockchain is the future

Why blockchain?

Blockchain
IS NOT
Crypto currencies

**It underpins the
fourth industrial
revolution.**

INNOVATION

Is coming

BLOCKDATA

It's not just us saying this:



Deloitte.



BLOCKDATA

Finance

Healthcare

Energy

Media

Supply chain

Education

Environment

AI

Biotech

Government

AND

It's a network

**What happened when all
your friends used facebook?**

Understanding
+
Experimentation
=
Innovation

**How can the world
understand
blockchain if there
is no data?**

So?

**Technology is
not going away**

**Data is not
going away**

Not how can we stop it.

How can we deal with it?

**No one really understands
what is going on?**

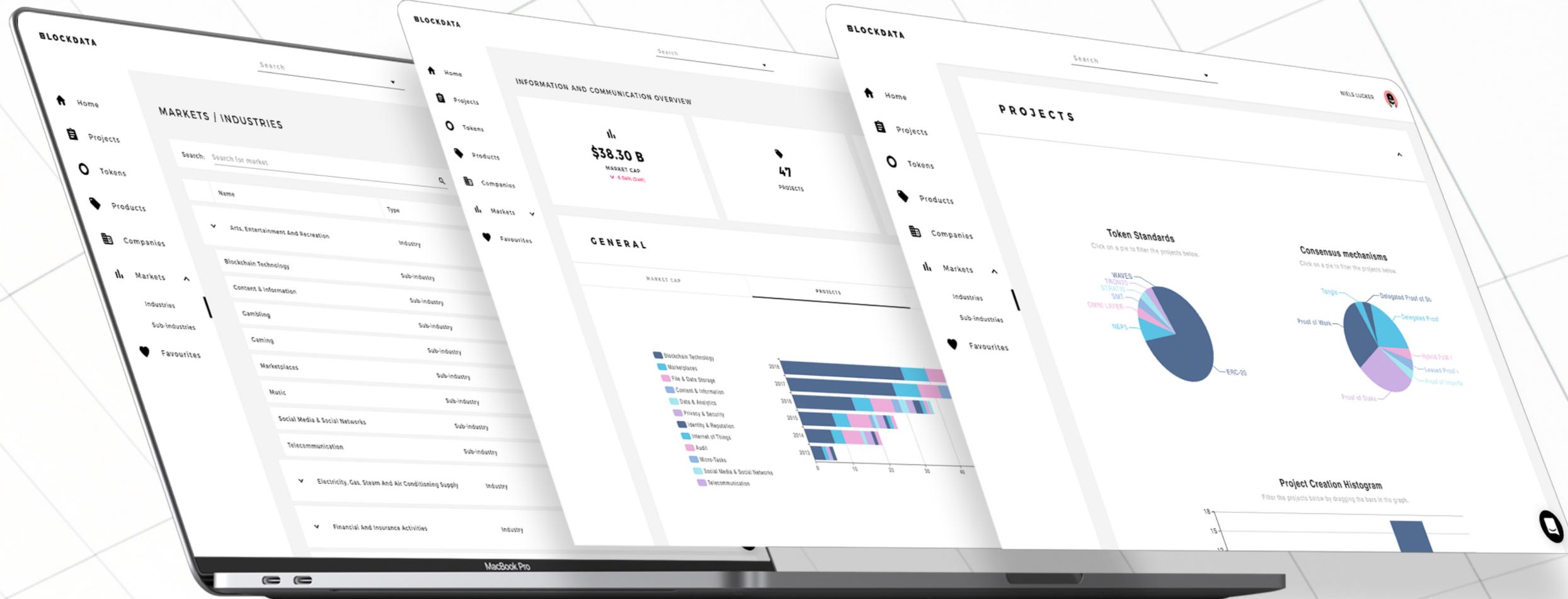
We need to understand who is:

**Building
Funding
Using**

**Where is the 'yellow pages'
for blockchain technology?**

BLOCKDATA

BLOCKDATA



We collect a lot of data..

By hand

Before you ask..

It's hard.

**We are building a proprietary
'collective intelligence engine'**

**Proprietary
what?**

Technology
+
People
=
Great data

8 person team
Angel funding
1 platform
1 office in Amsterdam

**We've worked with the best
to build the best data model**



Cool right?

**We are helping the world
understand how the future is
being built.**

While it is being built.

**Are you someone in
innovation who is
looking for answers?**

Contact us!

**Are you a long-term
investor who thinks the
world is about to change?**

Contact us.

When you talk to your grandchildren..

**How will you explain your
contribution to the future?**

www.blockdata.tech

jonathan@blockdata.tech

@blockdata_tech