Welcome to the MAG!

Payments' Past and Future
A Celebration of Progress

Network Name: MAG2018
Wi-Fi code: BOAMerchant

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2018 ANNUAL CONFERENCE | SEPTEMBER 12-14
MAG Celebrates 10 Years

The Early Years

Dee O’Malley (VP Financial Services, Best Buy)
Dodd Roberts (Former CEO, Merchant Advisory Group)
Mark Horwedel (CEO, Merchant Advisory Group)
MAG Celebrates 10 Years

*MAG Progress and our Future*

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Dean Sheaffer (SVP, Financial Services & Compliance Officer, Boscov’s)

Kristy Cook (Director of Payment Acceptance Technology, Target)

Eric O’Brien (Senior Manager, Payments Operations & Analytics, Dunkin’ Brands)
Keynote Address -  J.P. Morgan

A Decade in Payments: An Evolution of Innovation for Merchants

Kim Fitzsimmons (President, J.P. Morgan, Merchant Services)
Mark Horwedel (CEO, Merchant Advisory Group)
The International Payments Revolution

Moderator
Mario de Armas (Sr. Dir International Payments & Financial Services, Walmart)

Presenters
Wei Jiang (CEO & COO, Citcon)
Nandan Sheth (SVP & GM Global Debit Solutions, First Data)
Robert Clarkson (VP & GM North America, Merchant & Retail Solutions, PayPal)
What is the Future of Authentication?

Moderator
John Drechny (VP, Merchant Advisory Group)

Presenters
Melyssa Barrett (VP, Visa)
Bob Reany (EVP, Identity Solutions, Mastercard)
JJ Kieley (VP, Payments Consulting Group, US & LAC, American Express)
Tom Pouliot (ChinaUnionPay, USA)
Noda Masao (SVP, Brand Infrastructure & Technologies, JCB Co., Ltd)
How the ACH Lowers the Cost of Payments

Moderator
Gray Taylor (Executive Director, Conexxus)

Presenters
Adam Frisch (CEO, BIM)
Don Frieden (CEO, P97)
Jim Macari (Director Innovation, Phillips 66)
Chris Suess (GM Payments Americas – Shell Oil Products Company)
The War Against Fraud

Moderator
Jason Oxman (CEO, Electronic Transactions Association)

Presenters
Michael Reitblat (CEO, Forter)
Jeff Zuehlke (Fraud Program Manager, Best Buy)
Steve Scarince (Associate Managing Director, Kroll)
Denis Bouchard (Head of Payments, The Wendy's Company)
91% of ecommerce login attempts are fraudulent, compared to:

- 60% of airline login attempts
- 58% of consumer banking login attempts
- 44% of hotel login attempts

Data from Shape Security
Fraud Costs (% of Revenues)

- Retail: 1.58%
- eCommerce: 2.17%
- Financial Services: 2.39%
- Lending: 1.61%

Data from LexisNexis
In Person vs Remote Fraud (% by Value)
2015 - 2016

Data from Federal Reserve
The Blockchain
and the Future of Payments

David G.W Birch (@dgwbirch)
author, advisor and commentator on digital financial services

13th September 2018
David G.W. Birch
author, advisor and commentator

- Global top 15 favourite sources of business information (*Wired Magazine*);
- London FinTech Top 10 most influential commentators (*City A.M.*);
- Top 10 Twitter followed by innovators, alongside Bill Gates and Richard Branson (*PR Daily*);
- Top 10 most influential voices in banking (*Financial Brand*);
- Top 50 blockchain insider (*Richtopia*);
- Europe’s most influential commentator on emerging payments (*Total Payments*).
Agenda

• What is the blockchain?

• Will we pay with cryptocurrencies?

• Are these the future of money?
Understanding the blockchain

The “4x4” model for management
The Shared Ledger

Between the governance and the applications, we can think of the ledger in four layers:

- **Contract**: How do we use the transaction record?
- **Content**: What is in the transactions?
- **Consensus**: How do we decide which transactions are valid?
- **Communications**: What network do we use for the transactions?
Now it’s cheaper and simpler to just give everyone a copy of everything

(which does not mean, necessarily that they can read everything!)
We may wish to implement some form of shared ledger to deliver reliability even if we do not want to use any of the other features of the new technology.
Shared Ledger Consensus Layer

Those famous “Byzantine Generals” and their co-ordination problem
Why Shared Ledger? Transparency

By one measure, for about every $40 in assets, the nation's investment banks had only $1 in capital to cover losses, a percent drop in asset values could have wiped out the firm's excessive leverage using derivatives, off-balance-sheet trading, and other devices, the report found. The speculative binge was a giant "shadow banking system" in which the banks relied on term debt.

"When the housing and mortgage markets cratered, the lack of transparency, the extraordinary debt load, the short-term loans and the risky assets all came home to roost," the report found. "What resulted was panic. We had reaped what we had sown."

The report, which was heavily shaped by the commission's chairman, Phil Angelides, is dotted with literary flourishes. It calls credit-rating agencies "cogs in the wheel of financial destruction." Paraphrasing Shakespeare's "Julius Caesar," it states, "The fault lies not in the stars, but in us."

LESSONS FROM THE LAST FINANCIAL CRISIS AND THE FUTURE ROLE OF INSTITUTIONAL INVESTORS

by Lars Rohde

The dynamics of the financial crisis were driven by underpricing of risk and lack of transparency, which led to a loss of confidence when the bubble finally burst. Crisis resolution involved massive government interventions that caused a permanent transfer of losses to the public sector as well as sovereign-debt crises that involve painful solutions. Letting banks fail is a necessary disciplinary tool, but this requires a well-defined "game plan" which did not exist in the regulatory reforms underway at restoring confidence, but they may be the long-term potential of institutional investors. Nevertheless, institutional investors should still be able to provide risk capital – except for social pension funds, which have been weakened by demographic events. Finally, improving governance and reducing excesses that take on excessive risk, and the non-confidence-imposing quality of former Treasury Secretary Henry Paulson's initial response to the crisis.

A bit farther down the list are various contributing factors, which didn't fundamentally cause the crisis but either enabled it or made it worse than it otherwise might have been. These include global savings imbalances, which put upward pressure on U.S. asset prices and downward pressure on interest rates during the bubble years; conflicts of interest and misspeculations on the part of credit rating agencies Moody's and Standard and Poor's about the risks of mortgage-backed securities; the lack of transparency about the risks borne by banks, which used off-balance-sheet entities known as SVIs to hide what they were doing; excessive reliance on mathematical models like the VaR and the dreaded Gaussian copula function, which led to the underpricing of unpredictable forms of risk; a flawed model of executive compensation and implicit too-big-to-fail guarantees that encouraged traders and executives at financial firms to take on excessive risk, and the non-confidence-imposing quality of former Treasury Secretary Henry Paulson's initial response to the crisis.

Each bubble, each crisis, leads to structural response and growth

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We can think about the impact on business (and society) using a simple taxonomy.

**Public Shared Ledgers**
- **Yes** anyone can use it
- **double permissionless**

**Private Shared Ledgers**
- **No** only a selected group
- **double permissioned**

**Questions:***
- **why do they maintain the integrity?**
  - They are given rewards on the ledger itself
  - They are given incentives off the ledger

- **who maintains the integrity?**
  - All group members
  - Privileged group members
Four Kinds of Shared Ledgers

- Can anyone use the ledger?
  - Yes: anyone can use it
  - No: only a selected group

- Why do they maintain the integrity?
  - In the ledger itself
  - Off the ledger

- Who maintains the integrity?
  - All group members
  - Private members

- Communication choice
- Consensus choice

- Bitcoin: double permissionless
- R3 Quorum: permissioned

- Public Shared Ledgers
- Private Shared Ledgers

- Note the taxonomic distance between (e.g.) Bitcoin blockchain and R3
Cryptography can deliver new and counterintuitive functionality and “zero knowledge proofs” are a good example.
Why Shared Ledger? Flexibility

- People are already storing many different kinds of data on shared ledgers

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#### Smart Contracts Lie on a Spectrum

<table>
<thead>
<tr>
<th>Contract entirely in code</th>
<th>Contract in code with separate natural language version</th>
<th>“Split” natural language contract with encoded performance</th>
<th>Natural language contract with encoded payment mechanism</th>
</tr>
</thead>
</table>

**Encoding Natural Language**  
**Automation**

---

**Smart Contracts: 12 Use Cases for Business & Beyond**

* A Technology, Legal & Regulatory Introduction — Foreword by Nick Szabo

- "Contracts" are just software – that’s why they are so flexible
Shared Ledger? Innovation

The consensus computer (and the Bouvier-Sams boundary)
The impact on point-of-sale

Will cryptocurrencies make a difference?
Cryptocurrency on the Cards?

Where does a shared ledger make sense?
Try Bitcoin!

Send a Bitcoin this address and I will tell you if it arrives

1B6JRFesFeXLsbvKSuOEJ7ENDfsNBgTWM4
Focus on Bitcoin

Bitcoin was never designed for retail point of sale.
The Starbucks Way

"Starbucks are going to accept Bitcoin”
Step Back: What’s the Problem?

A payments thought experiment... Visa Europe collapse
The impact on payments

If not cryptocurrencies, then what?
Wait, What...Tokens?

Put cryptocurrencies to one side and think about digital money as an app.
“According to one estimate, from Coinschedule, a firm that tracks such things, by early August 706 ICOs had raised almost $18bn from a mix of institutional investors and individuals this year. That compares with just 221 ICOs in the whole of 2017, raising $3.7bn.”
Token Regulation

Securities tokens
ICOs
SEC “walks like a duck” etc

Utility tokens
Access to services

Payment tokens
Liquid (bearer) alternative to “traditional” equity and debt
## Tokens and Currency

### A Layered Model for Discussion

<table>
<thead>
<tr>
<th>digital identity</th>
<th>AG35BC187H2 is David Birch</th>
</tr>
</thead>
<tbody>
<tr>
<td>digital money</td>
<td>value 10111010111 is £2.79</td>
</tr>
<tr>
<td>digital value</td>
<td>value 10111010111 is in wallet AG35BC187H2</td>
</tr>
</tbody>
</table>

- **cryptomarket**
- **cryptoasset**
- **cryptocurrency**
  - ETH, BTC, ZCH etc
The future of tokenized fundraising

“It’s the tokenization of the asset that’s the revolution,” said Dave Birch, chief innovation, Consult Hyperion, a London-area consultancy that specializes in payments transactions. Birch interviewed corporate venture-capital manager John Larsen of Money20/20 Asia.

“Tokenization is a really massive trend,” Larsen said. “That’s a much broader way of looking at cryptocurrencies, initial coin offerings (ICOs), and even blockchain.” Larsen is the innovation officer of Ping An Group and head of the Ping An Global Innovation Center, a Chinese financial-services holding group based in Shenzhen.
Don’t Listen to Me (July 2018)

Introducing a16z crypto

by Chris Dixon

Blockchain computers were first proposed in 2008 by Satoshi Nakamoto in the Bitcoin whitepaper. Those original types of computers where the unique capability is trust between users, developers, and the platform itself. This trust emerges from the mathematical and game-theoretic properties of the system, without depending on the trustworthiness of individual network participants. In exchange for these new capabilities, blockchain computers trade off other capabilities such as transaction scalability. This can lead people to dismiss them, in the same way people dismissed early smartphones because they traded off computing power and screen size for portability and new sensors.

Trust is a new software primitive from which other components can be constructed. The first and most prominent is digital money, made famous by Bitcoin. But, as we’ve discovered over the past few years, many other software components can be constructed using the building blocks of trust. Smart contract platforms like Ethereum enable creation of, among other things, application-specific currencies, digital property rights, open financial instruments, software-based organizations.

Listen to the VCs

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Winklevoss twins’ Gemini Trust launches world’s first regulated stablecoin

By Aaron Hankin
Published: Sept 10, 2018 10:20 a.m. ET

State Street to hold the U.S. dollars backing the Winklevoss firm's stablecoin

Gemini Trust, the cryptocurrency exchange founded by Cameron and Tyler Winklevoss, has won approval from New York finance regulators to launch Gemini Dollars, digital tokens pegged in value to the U.S. dollar and transferable on the Ethereum blockchain.
Token money

If anyone can, then who could, should or would issue digital currency?
## The “5Cs” of Future Money

<table>
<thead>
<tr>
<th>Who could issue money in the future?</th>
<th>Why would they want to do it?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Banks, digital currency</td>
<td>Private seigniorage</td>
</tr>
<tr>
<td>Central Banks, digital fiat currency</td>
<td>Control and economic growth</td>
</tr>
<tr>
<td>Cryptography, cryptocurrency</td>
<td>Dosh ex machina</td>
</tr>
<tr>
<td>Companies, private currency</td>
<td>To fund products and services</td>
</tr>
<tr>
<td>Communities, decentralized currency</td>
<td>Local money, bearing in mind that local doesn’t mean geographic any more</td>
</tr>
</tbody>
</table>
Commercial Bank

Creation separate issue from use of shared ledger technologies to manage payments (cf “stablecoin” approaches).

Commercial bank accounts as “skin” on central bank or separate as now?

The People’s Bank of China “double tier” approach.

Central bank control of creation.

Commercial bank distribution.

We tried this before with Mondex!
Central Bank

There are obvious +ve GDP benefits to a digital currency.

- Reduced friction
- Increased innovation – cash has no API

Central banks could maintain accounts for people and organisations.
Retail chequing accounts would be a skin on central bank balances.

**Note central bank digital currency impact on commercial banks.**
Cryptography

Digital currency outside of central banks, commercial banks or other institutions

What are the requirements?

- Anonymity?
- Censorship resistance?
- Fungibility?

Private keys as “digital gold”
Companies

M-PESA currency board, Air miles... tokens?
Companies: Private Money

“pre-agreed algorithms would determine which financial assets were sold by the purchaser of the good or service depending on the value of the transaction…”

“the same system could match demands and supplies of financial assets, determine prices and make settlements…”

the key to any such a system would be.... “the ability of computers to communicate in real time to permit instantaneous verification of the creditworthiness of counterparties”

I look forward to a time when the successors to Bill Gates will have put the successors to Alan Greenspan out of business.

Edward de Bono (March 1994)
Communities

Reduce internal transaction costs, increase external transactions costs

Community Consensus

Many Hands
City-states replace nation states as the basis for society and commerce

Long Hand
Affinity groups replace nations and much commerce is "domestic"

Mundane

Second Hand
We muddle through and London remains a global financial services centre

Visible Hand
We don't change anything but continue current trends towards collapse

Virtual

national currencies collapse and are replaced by barter, private currency, gold and cigarettes

Washington Consensus

regional currencies begin to dominate and the free market keeps them stable

virtual currencies dominate

thanks to www.longfinance.net

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From Dumb Money to Smart Money

<table>
<thead>
<tr>
<th>Dumb Money</th>
<th>Smart Money</th>
</tr>
</thead>
<tbody>
<tr>
<td>Money as a number</td>
<td>Money as a token</td>
</tr>
<tr>
<td>Standalone money</td>
<td>Money with an API</td>
</tr>
<tr>
<td>Money that substitutes for memory</td>
<td>Money that has a memory</td>
</tr>
<tr>
<td>Money that you can make decisions about</td>
<td>Money that can make decisions about you</td>
</tr>
<tr>
<td>Money that is a static creation of the nation state</td>
<td>Money that is the dynamic property of communities</td>
</tr>
</tbody>
</table>
in the future, everyone will be famous for fifteen megabytes

engage 15Mb Ltd.
post 1 Armadale Road, Woking, Surrey GU21 3LB, UK
call +44 7850 863168
contact dave@15Mb.ltd
visit www.15Mb.ltd
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connect https://www.linkedin.com/in/dgwbirch/
order amazon.co.uk “Before Babylon, Beyond Bitcoin”
MAG Leadership Transition

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