

What is Blockchain?

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SKODA MINOTTI

CPAs, BUSINESS & FINANCIAL ADVISORS

Delivering on the Promise.

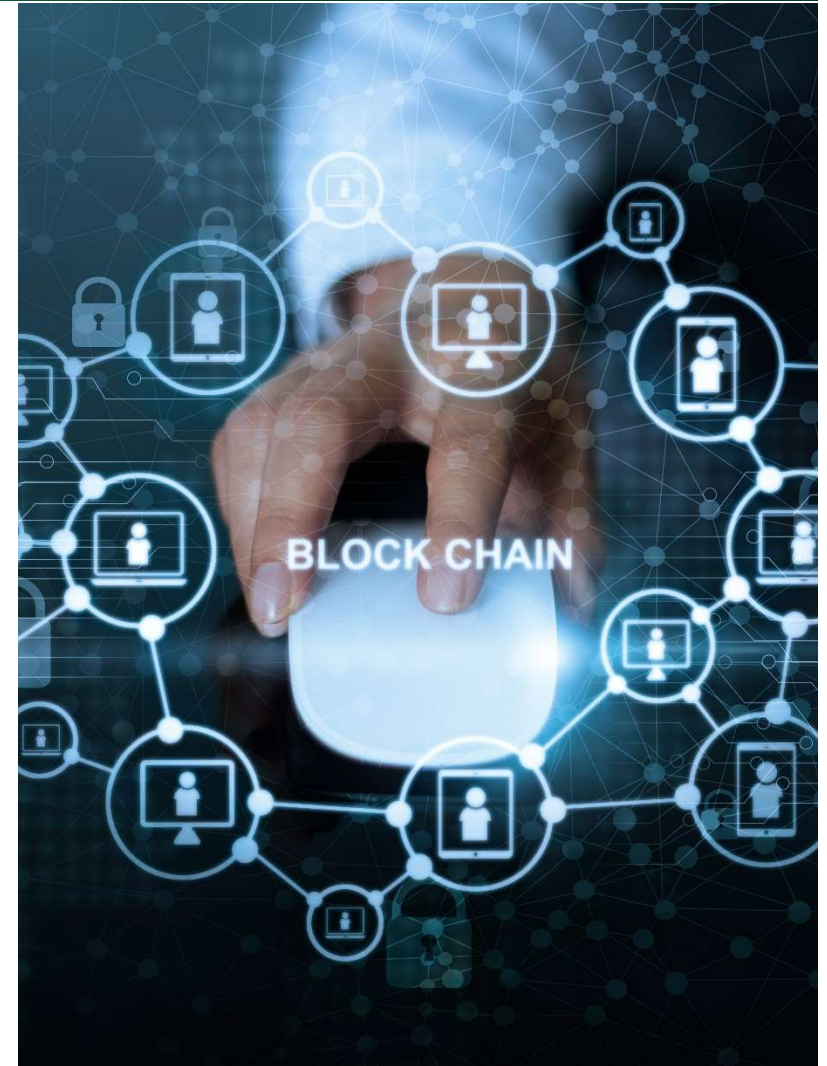
Agenda

- What is blockchain?
- Types of blockchain
- Security
- Hurdles
- Industry impact
- Next steps



What is Blockchain?

- Distributed, digital ledger
- Continuously growing list of records
- Stores information from transactions
- Verified by the community



What is Bitcoin?



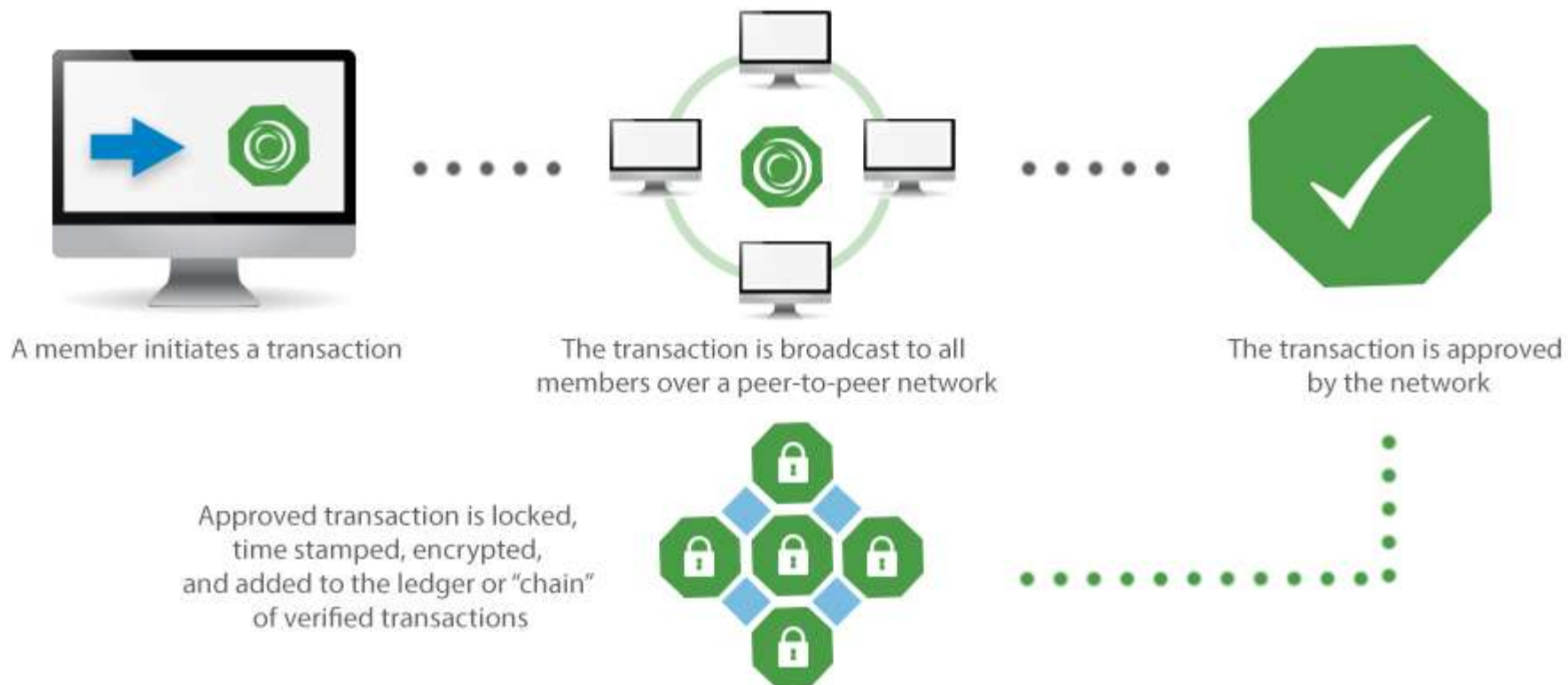
Bitcoin is a purely peer-to-peer version of electronic currency that allows online payments to be sent directly from one party to another without going through a financial institution.

Why Bitcoin?

- Double-spending problem
- Bitcoin stores details of every transaction that ever happened in the network in a huge version of a ledger, called the blockchain
- Bitcoin “miners” process transactions and secure the network using specialized computer hardware through a “proof-of-work” system

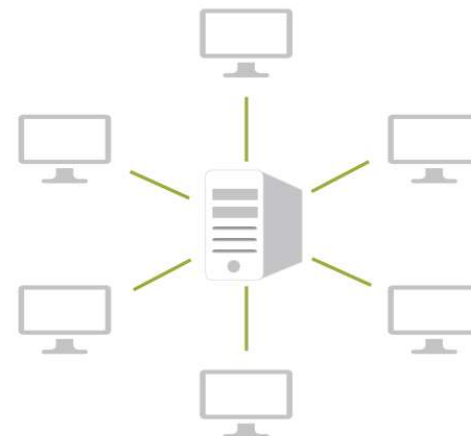
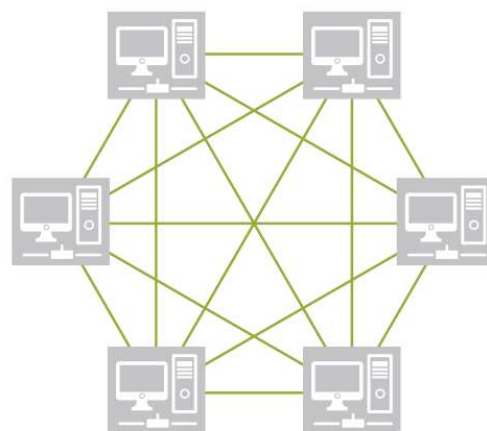
How Blockchain Works

How does blockchain work?



Characteristics of Blockchain

- Decentralized
- Consensus
- Immutability
- Hash identifier
- Distributed ledger



“The blockchain will do to the financial system what the internet did to media.”

– Joichi Ito, Neha Narula and Robleh Ali
(*Harvard Business Review*)

Types of Blockchain

- Public blockchain
- Private blockchain
- Consortium blockchain



Blockchain Security

- Blockchain manipulation
 - Hash functions
- Cryptography
 - Public and private keys
- Distributed ledger



Smart Contracts and Blockchain

- Smart contracts are automated contracts that are embedded in the blockchain
- Help exchange money, property, shares or anything of value, conflict-free
- Avoids a middleman



Blockchain Benefits

- Immutable
- Distributed ledger
- Lacks single point of failure
- No single-party control
- Efficient
- Reliable



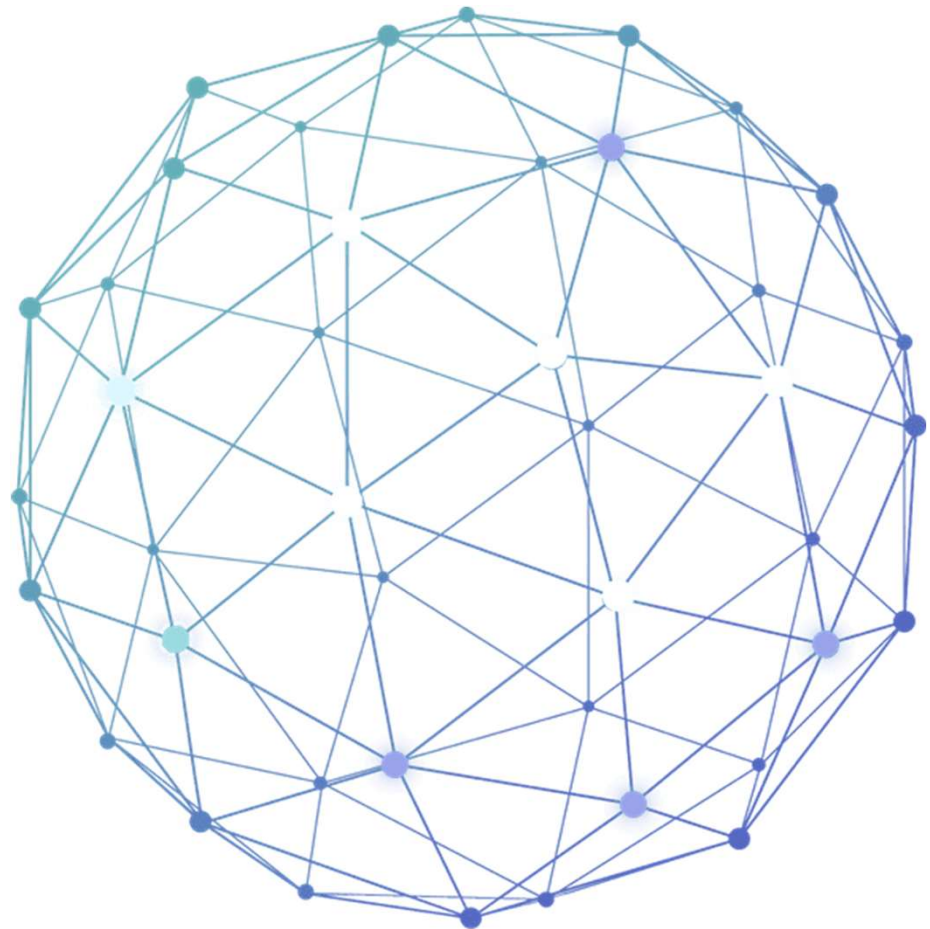
Blockchain Hurdles

- Technically complicated
- Lack of blockchain developers/engineers
- Speed
- Expensive
- Uncertainty in the regulatory environment



Where Can Blockchain Be Applied?

- Accounting
- Financial Services
- Healthcare
- Real Estate
- Manufacturing



50+ BLOCKCHAIN REAL WORLD USE CASES

GOVERNMENT

Essentia develops world's first blockchain solution to manage international logistics hub together with Traffic Labs and the Finnish Government

essentia.one

IDENTIFICATION

Voter registration is being facilitated via a blockchain project in Switzerland spearheaded by Uport.

uport

MOBILE PAYMENTS

The blockchain ledger that Ripple uses has been latched onto by a group of Japanese banks, who will be using it for quick mobile payments.

ripple

INSURANCE

A smart contract-based blockchain is being used by Insurer American International Group Inc as a means of saving costs and increasing transparency.

AIG

ENDANGERED SPECIES PROTECTION

The protection of endangered species is being facilitated via a blockchain project that records the activities of these rare animals.

CARBON OFFSETS

IBM is using the Hyperledger Fabric blockchain in China to monitor carbon offset trading.

IBM

HYPERLEDGER

ENTERPRISE

Ethereum's blockchain can be accessed as a cloud-based service courtesy of Microsoft Azure.

Microsoft Azure

BORDER CONTROL

Essentia has devised a border control system that would use blockchain to store passenger data in the Netherlands.

essentia.one

SUPPLY CHAINS

IBM and Walmart have partnered in China to create a blockchain project that will monitor food safety.

IBM

Walmart

HEALTHCARE

A number of healthcare systems that store data on the blockchain have been pioneered including MedRec.

MEDREC

SHIPPING

Shipping is a natural fit for blockchain, and Maersk have been trialling a blockchainbased project within the maritime logistics industry.

MÆRSK

REAL ESTATE

Blockchain is now being used to complete real estate deals, the first of which was conducted in Kiev by Propy.

PROPY

ENERGY

Essentia is developing a test project that will help energy suppliers track the distribution of their resources in real time, whilst maintaining data confidentiality.

essentia.one

LAND REGISTRY

Land registry titles are now being stored on the blockchain in Georgia in a project developed by the National Agency of Public Registry.

NATIONAL AGENCY OF PUBLIC REGISTRY

COMPUTATION

Digital Currency Group are helping Amazon Web Services examine ways in which the distributed ledger technology can help improve database security.

DIGITAL CURRENCY GROUP

ADVERTISING

New York Interactive Advertising Exchange has been experimenting with blockchain as a means of providing an ads marketplace for publishers.

NYIAX

BORDER CONTROL

Essentia is developing a blockchain project for border control that will allow customs agents to record passenger data from an array of inputs and safely store it.

essentia.one

JOURNALISM

Decentralized journalism, as enabled by blockchain technology, has the potential to prevent censorship and increase transparency, as Civil has shown.

CIVIL

WASTE MANAGEMENT

Waltonchain is using RFID technology to store waste management data on the blockchain in China.

ENERGY

Food importation is another industry where blockchain is proving its worth, with Louis Dreyfus Co trialling a soybean importation operation using this technology.

LDC

DIAMONDS

The De Beers Group is using blockchain to track the importation and sale of diamonds.

DE BEERS

FINE ART

By storing certificates of authenticity on the blockchain, it's possible to dramatically reduce art forgeries, as one blockchain project is proving.

NATIONAL SECURITY

For the past two years, the US Department of Homeland Security has been using blockchain to record and safely store data captured from its security cameras.

U.S. DEPARTMENT OF HOMELAND SECURITY

TOURISM

In a bid to boost its tourism economy, Hawaii is examining ways in which blockchain-based cryptocurrencies can be adopted throughout the US state.

STATE OF HAWAII

TAXATION

In China, a tax-based initiative is using blockchain to store tax records and electronic invoices led by Miaocai Network.

MIAOCAI NETWORK

ENERGY

Chile's National Energy Commission has started using blockchain technology as a way of certifying data pertaining to the country's energy usage as it seeks to update its electrical infrastructure.

CNE

COMISIÓN NACIONAL DE ENERGÍA

RAILWAYS

Russian rail operator Novotrans is storing inventory data on a blockchain pertaining to repair requests and rolling stock.

НОВОТРАНС

ENTERPRISE

Google is building its own blockchain which will be integrated into its cloud-based services, enabling businesses to store data on it, and to request their own white label version developed by Alphabet Inc.

Google

Alphabet

MUSIC

Arbit is a blockchain-based project led by former Guns N Roses drummer Matt Sorum seeking a fairer way to reward musicians for their creative efforts.

arbit

FISHING

Blockchain technology has been used to provide a transparent record of where fish was caught, as a means of ensuring it was legally landed.

Blockchain and the Accounting Industry

- Blockchain is here
 - Big Four are investing/automating audits
- Audit trail
- Tracks ownership of assets
- Smart contracts – executed automatically
- Up-to-the-minute inventory records and tracking
- Elimination of month-end close

Blockchain and the Accounting Industry

- Other Advantages

- Reducing the potential for errors when reconciling complex and disparate information from multiple sources
- Real-time accounting
- Freeing an auditor's time to focus on more value-added services
- Decreasing the time it takes to complete an audit which, in turn, eases the associated burden on clients
- Cash savings to clients from the reduction in audit testing
- Reducing fraudulent activities
- Increasing security against cyberattacks and hacking

Blockchain and the Accounting Industry

- Where Will It Start?
 - Payables/receivables
 - Intercompany transactions
 - Contracts and agreements
- Tax Advantages
 - No more time spent on hold with the IRS
 - Withholdings (transparency)



Blockchain and the Accounting Industry

What You're Doing Now	The Disruption	Your New Job
Examining statements to ensure accuracy	Blockchain technology inherently ensures accuracy of the ledger	<ul style="list-style-type: none"> • Examining the accuracy of blockchain inputs to ensure data is based on accurate information • Reviewing blockchain outputs for accuracy to ensure data has not been tampered with
Documenting financial transactions by entering account information	Blockchain captures transactions on the distributed ledger	<ul style="list-style-type: none"> • Analyzing transactions rather than entering them
Overseeing budget and financial management	Blockchain tracks transactions that can be easily viewed for analysis, and organizations can set rules in blockchain smart contracts to ensure money is spent on what it has been allocated for	<ul style="list-style-type: none"> • Monitoring and providing real time financial recommendations based on blockchain data • Recommending rules to govern the blockchain • Partnering with business units to provide insights and data interpretation
Summarizing current financial status by collecting information; preparing balance sheet, profit and loss statement, and other reports	Blockchain holds financial information in one location so it is easily collected and prepared into reports	<ul style="list-style-type: none"> • Using data from the blockchain to generate reports and financial statements • Analyzing reports, as the blockchain creates efficiencies in report generation

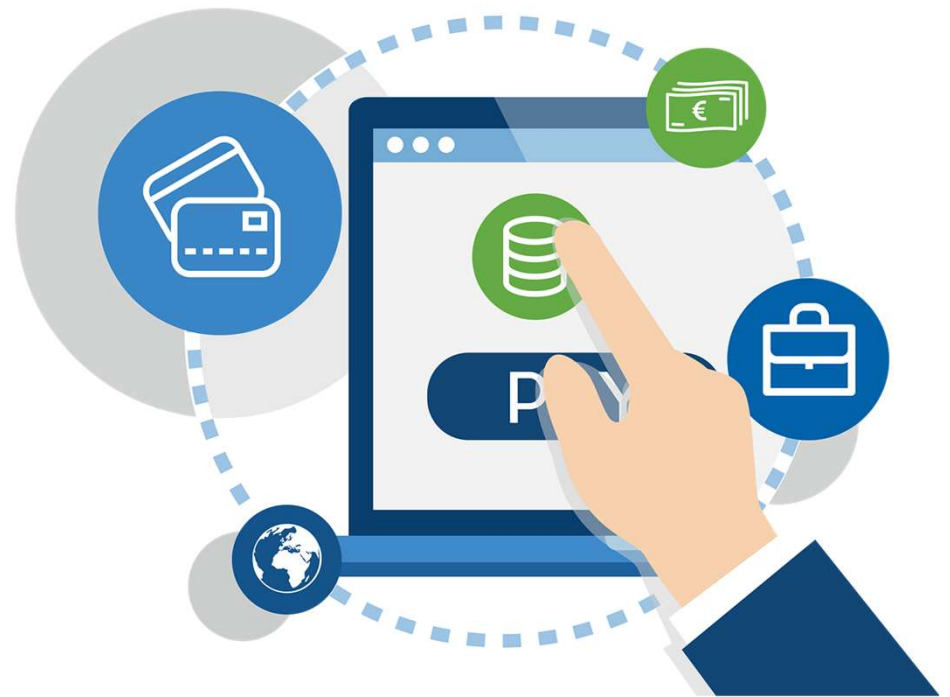
Opportunities from Disruption

- Auditor of smart contracts
- Service auditor for a consortium blockchain
- Administrator function
- Arbitration function



Blockchain and the Financial Services Industry

- Payment processing
- KYC
- Improved security and data quality



Blockchain and the Healthcare Industry

- Medical Records
- Consent Management
- Micropayments



Blockchain and the Real Estate Industry

- Title records/transfers
- Property data
- Leasing arrangements



Blockchain and the Manufacturing Industry

- Supply chain
- Traceability
- Additive manufacturing/3D printing



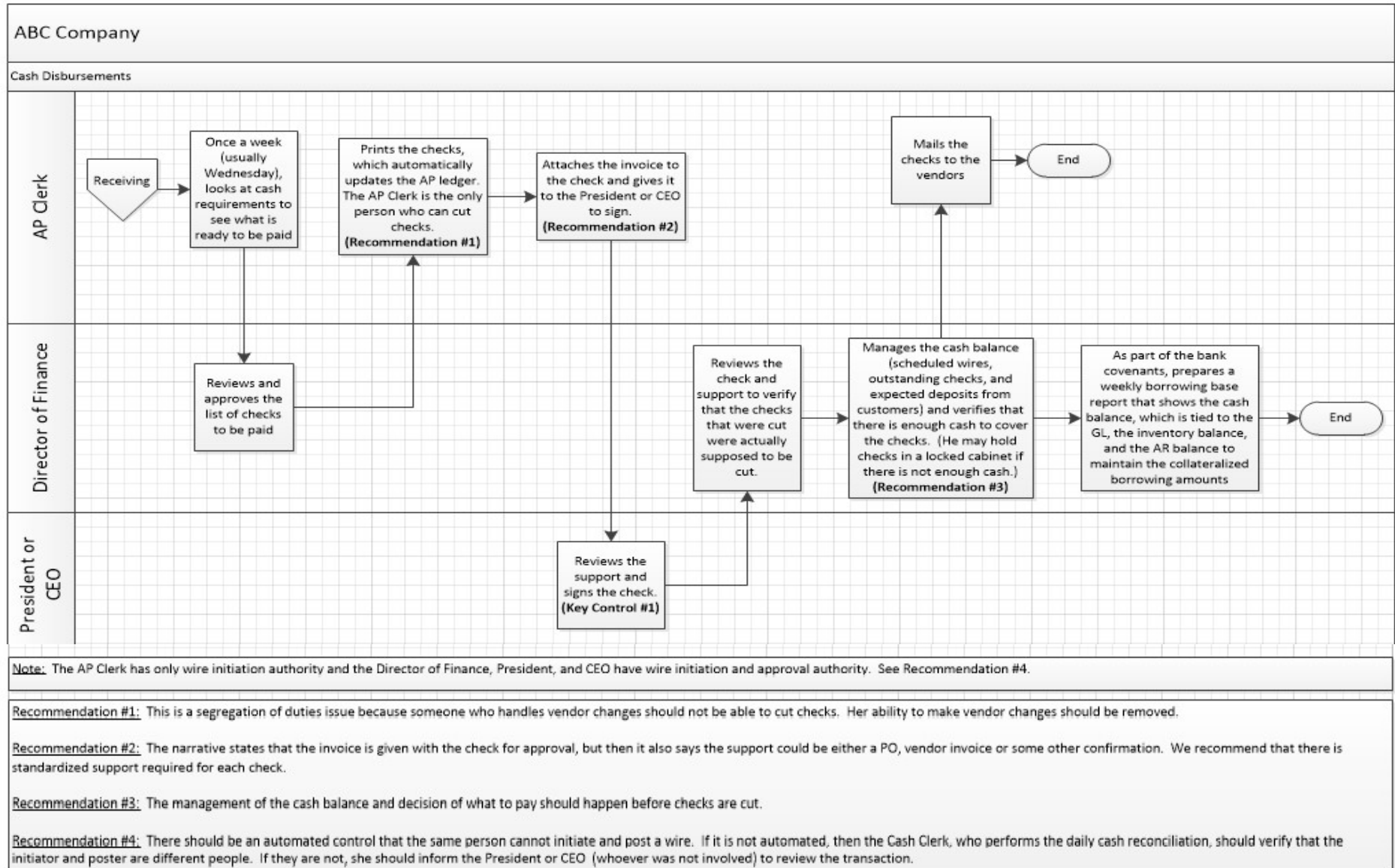
Next Steps

- Basic understanding
- Applicability to our clients today
- Trickle-down adoption
- What can I be doing now?

Process Documentation – Why?

- Facilitates an understanding of the processes
- Promotes agreement regarding process structure
- Clearly assigns individual responsibilities
- Highlights points of risks and controls
- May assist in identifying potential process improvements

Finished Product



Questions?

If you have questions or need additional information, please contact:



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