BRANDZ LEDGER

interactions
made
trustworthy

WHY US?

the parent company

Mangrovia is a software technology firm providing **consulting**, **development** and **support** services for blockchain solutions. Services include data management, smart contract development and machine learning. Ours is a unique ability to integrate any blockchain with any IT or legacy system, basing our solutions off customers' needs and developing modular software components pertinent to their existing applications.

Apart from being IBM and Oracle business partners, we are part of both INATBA (International Association for Trusted Blockchain Applications) and ETSI (European Telecommunications Standards Institute).

brandzledger

INTERACTIONS MADE TRUSTWORTHY

Brandzledger is a blockchain-based offering of cloud services tailor-made for supply chain processes. Made to empower brands with trustable data, ensuring secure, invulnerable and transparent information exchange, Brandzledger simplifies the integration of blockchain technology into existing enterprise solutions.

Our platform uses permissioned, enterprise blockchain technology to develop and establish trust amongst either collaborating or competing stakeholders in any process involving a transaction during the whole product or service life cycle, from beginning to end.

THE NEW STANDARD

MAP

Each stage of a supply chain is mapped out in order to fully trace and track the origins and movements of separate or whole components of a product. Through the identification of hotspots and risks, data quality is enhanced, allowing the pre-emptive implementation of corrective measures. Traceability is intrinsic to this process, guaranteeing supply chain integrity from source to customer and back again, giving full information while protecting sensitive data of the network's various participants.

AUDIT

Specific conditions may be programmed through smart contracts such that each stage has pre-set rules to adhere to in order for a product component to proceed to the next stage. Risk is mitigated through data verification and assessment of planning, execution and decision making throughout the entire supply chain. Standards are maintained through regular compliance audits at every single production point.

MONITOR

Alarms are set in place in order to trigger automatic notifications or actions that relevant parties must take. Swift reaction is thus permitted to any changes in the supply chain, both foreseeable and unforeseeable. Features include 24/7 global monitoring, optimisation of production phases and anomaly detection in processes.

EVALUATE

Through user dashboards, participants review and analyse the status of global processes in order to determine if supply chain management is performing in ways that will increase the bottom line, cash flows and shareholder returns. Data mined is fed into machine learning algorithms for business intelligence purposes and improving internal performance standards. Reports identifying emerging trends and patterns give precise KPI evaluation, translating complex data into actionable information.

COMMUNICATE

Transparent, verified data (eg. detailed certs, base-level information) is shared with approved participants, both internal (suppliers, distributors, etc) and external (end-consumers), with authorised viewing permission. Be it perfectly integrated coordination between channel stakeholders or compelling stories of each product's origin to consumers, Brandzledger's solution guarantees quality assurance and upholds brand reputation through the secure information it provides.

KEY AREAS

MORE THAN JUST HYPE

Brandzledger's blockchain-based solution will refine your supply chain to impact your company in 2 ways: your **bottom line** and your **brand image**.

EFFICIENCIES & COST SAVINGS:

Optimisation of operative processes, monitoring and containment of costs through real-time intervention of inefficiencies.

REPUTATION / CUSTOMER LOYALTY:

Distinguish your brand from the competition through offering your customers added value, in giving them the transparency and information they seek.

From **sourcing** to **procurement**, to **logistics**, **inventory management** and **conversion**, Brandzledger implements a coordination between channel stakeholders that is both seamless and secure, providing suppliers, intermediaries, third-party providers and customers tamper-proof data that is immutable, traceable and easily verified.

HOW IT WORKS

All location points in a production line are **nodes** within our solution, each assigned to one administrative user group, in charge of either certifying or validating that one production phase.

Each product is given a code, a unique identifier imprinted onto a physical **tag** connected to it, which may be transcribed with the product's GS1 identifier. **Users** connect from **devices** pegged to their individual IDs, permitting them to register authorised operations effected on a product.

Products can be made of varied parts, ie. they may be broken down into sub-products, each of these with their own unique product ID connecting them to the parent product (one-to-many). Similarly, a number of products may connect to a new product (many-to-one).

Each product ID allows the traceability of: the product's entire production line (every stage), every user that has come into contact with its verification and data registration, and a timestamp for every new data entry. This traceability extends to either its derivatives (subsequently connected products), or the parent product it is derived from.

Your selected ERP, which would communicate with Brandzledger via API/REST, will furnish all relevant information with your customers via either a custom app they have access to, or your website.

	customer-facing app	
Client's ERP	Client's middleware	Supplier's ERP
	API/REST	
	BRANDZLEDGER	
	HYPERLEDGER BLOCKCHAIN	

"Blockchain powers transparency and allows brands to not only communicate their values, but also hold all of their supply chain partners and producers accountable for each step."

Rachel Scott,
The Future Laboratory

EXAMPLE

A supply chain requests for blockchain implementation in order to heighten its security and allow end-users to view the provenance of a product. Taken into account are existing assets (eg. archives, software and IoT devices) and current data flows and formats.

Brandzledger is then installed in a local server or hosted via cloud, configured to receive all product data. User authentication systems, authorised user groups and their respective permissions are defined. Devices designated to read and create tags are configured to utilise Brandzledger's services in order to register product data once stages are cleared. Phases that are not managed by these devices are either integrated into new devices or integrated through web or mobile interfaces.

All existing software is then configured to access Brandzledger in order to read the blockchain's data.

Brandzledger is then accessed through a dashboard from a web interface, customised based on client's requests. Alternatively, new web interface functions are created and customised in order to interact with Brandzledger's features.

Brandzledger facilitates all activities of a supply chain's ecosystem:
- data registration of singular products & their individual derivatives,
- all related documentation,
- entire production lines,
- user identification certification for both participant individuals and companies,
- process automation and its management through specific alarms set in place.

CUSTOM MADE

GLOSSARY

Users
- may be persons, applications, or IoT hardware.
- can belong to one or more groups.
- user groups are assigned permission to: create, register, certify, validate, comment on, attach documentation, associate to other products, break down into subproducts.

Tags
- contain product identifiers (product IDs).
- any tag may be used as long as they allow a user to identify (read/interpret with device) them. tags may be either magnetic, metallic, or made of paper.
- tags may contain barcodes, QR or Data Matrix codes, RFID/NFC tags or whatever new technology may be available in the future.

Devices
- required to register an operation.
- may be PCs, embedded PCs or smartphones
- users interact with the solution using either a web interface or a mobile app
- applications / IoT devices interact with the solution using a REST/API interface
- devices connect to principal nodes on Brandzledger and selected blockchain

Nodes
- nodes are servers that permit users' devices to connect to and use the solution (Brandzledger)
- nodes may be on-premise (physically at a client's location), or hosted on a cloud
- all nodes possess a copy of the blockchain

Contact us for more

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MANGROVIA
BLOCKCHAIN SOLUTIONS