Northern Block

Empowering Consumer Brands through Supply Chain Transparency

HOW BLOCKCHAIN CAN STRENGTHEN THE WEAKEST LINK

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The Weakest Link:
Lack of Transparency in the Global Supply Chain

Section Scan

While the lack of supply chain transparency can often result into huge risks that cause fatal hits to a brand, on the flip side whoever gains the first-mover advantage to strengthen the weakest link will reap the greatest benefits.

In a globalized, fragmented and competitive business environment, manufacturing companies are under greater pressure than ever before to demonstrate supply chain transparency.

But supply chains today are complex, fluid, and fast-moving, and simply gaining visibility into all aspects of them presents many challenges, before attempting to provide transparency in a meaningful way. As consumer expectations demand greater speed, personalization and responsiveness, this complexity will only increase, and become more problematic to manage.

Legal and political frameworks vary at different points along the chain, and are easy to bypass in regions of more lax regulation and scrutiny. Datasets are incompatible, onerous to reconcile, or subject to regulatory quarantine. Lack of clarity regarding identity of trading partners can make mapping, never mind auditing, the full supply chain practically impossible. Research by Thomson Reuters found that 62% of corporates say they only perform due diligence on their immediate tier 1 suppliers[1]. **The uncomfortable truth is that many trusted consumer brands simply do not know enough about the provenance of the goods they make and sell, to have confidence in the quality, ethics and sustainability on which they base their reputation.**

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As a result brands are becoming increasingly vulnerable to supply chain related risks as their global connections increase, including:

- Contamination of ingredients and components at any stage in the product journey, which may result in direct risks to consumers using products which are unsafe or not fit for purpose/consumption;
- Counterfeit goods and brand trespassing, with lower quality materials and even finished goods being substituted, deceiving consumers into overpayment for inferior products;
- Rights violations in production and transit, including child labor, coerced labor, and unsafe working conditions;
- Environmental liabilities, from raw material extraction, manufacturing, and logistics.

Any one of these leads directly to expensive recalls and damage limitation expenses, risk which are typically underestimated and under-insured[2]. **But all too often in our socially connected world, they also lead to catastrophic reputational damage and PR annihilation - destruction of the brand equity of consumer trust.**

CASE STUDY

Smoking: informed consent?

Adult smokers are free in most markets to make up their own minds about the risks — but they can only do this if they really know what they are inhaling.

A recently published report by KPMG covering the illicit market in the EU, Norway and Switzerland estimated that in 2017, counterfeit and contraband cigarette consumption was 8.7 per cent of total use in the EU[3]. That's 44.7 billion cigarettes. It's a global problem, not just a European one, with illegal producers buying up decommissioned machinery on auction sites, and using geoarbitrage to produce inferior goods where labor is cheap, then inserting them into the supply chain as counterfeit for popular branded products.

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According to the Transnational Alliance to Combat Illicit Trade[4], illicit products can be more affordable and accessible, while potentially being contaminated with pesticides, arsenic and rat poison. Illicit trade in tobacco products also represents a major source of illegal income for organized crime and terrorist organizations.
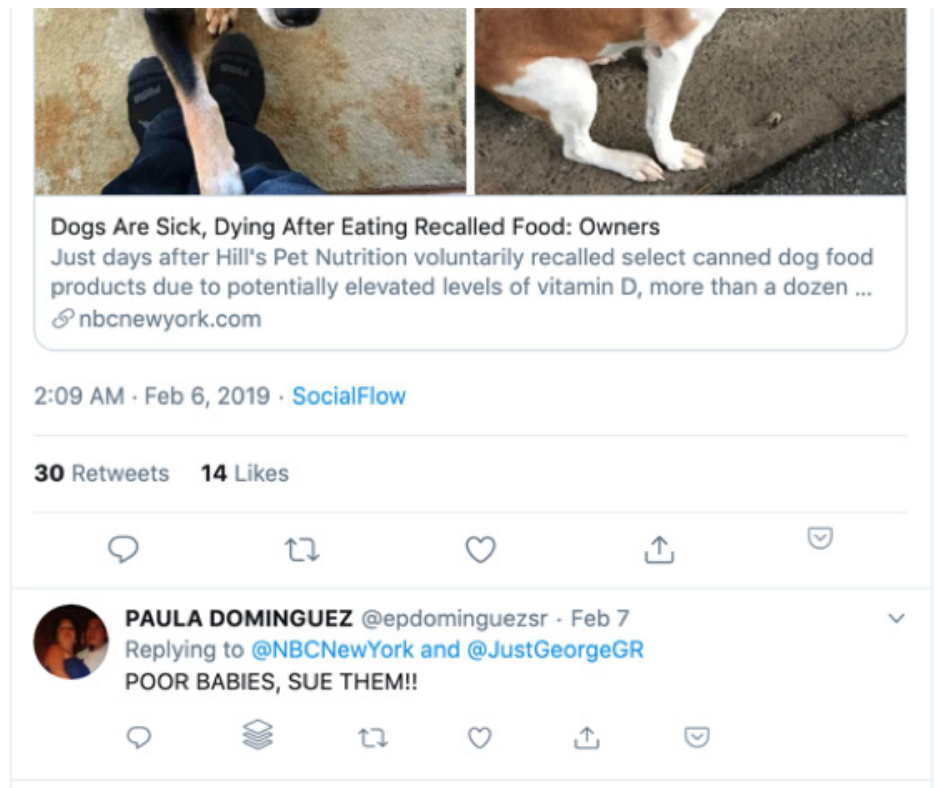
Consumers deserve better than this kind of deception, that's obvious. But as brand can you afford the double hit, both to revenues and reputation, that results from counterfeit goods?

Brands can collapse into chaos with product recalls

Initiating a product recall is something not done lightly, considering the avalanche of unbudgeted costs this will trigger.

While production is paused and investigations proceed into the source of the damage, contamination or error, complex logistical tactics must be immediately implemented to scope the scale and severity, identify touchpoints, and issue appropriate notifications. This requires immediate resourcing and management under huge time pressure, to limit all damages as quickly as possible.

In our connected world where news travels fast, managing the media message is also critical. Consumers help spread the message through social media, oblivious to containment or location: "Brand X can kill you, tell your friends". Buyer behavior can change overnight, when fear combines with misinformation and a desire to be first with essential news.

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Dogs Are Sick, Dying After Eating Recalled Food: Owners
Just days after Hill's Pet Nutrition voluntarily recalled select canned dog food products due to potentially elevated levels of vitamin D, more than a dozen ...
🔗 nbcnewyork.com

2:09 AM · Feb 6, 2019 · SocialFlow

30 Retweets   **14** Likes

PAULA DOMINGUEZ @epdominguezsr · Feb 7
Replying to @NBCNewYork and @JustGeorgeGR
POOR BABIES, SUE THEM!!

As the PR department mobilizes, the recall then impacts large-scale supply and inventory patterns — from stores where time and resources are involved in recall-related details (product pulling, local reimbursement, notifications), through to the manufacturers, repackers and wholesalers and distributors whose just-in-time operations are significantly disrupted.

Even if all the logistics are swiftly contained, litigation can follow.

If consumers are made unwell or put at risk by a recalled product, class action lawsuits can expose negligence, compliance violations, even malicious intent — creating long-term ripples of damage to the brand for years to come. This can even impact across entire industries, if new audit requirements are introduced as a result of this increased public scrutiny.

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What you don't know about your suppliers could put kids on dialysis

A CDC investigation in 2017 followed the outbreak of a rare strain of E. coli bacterium. The SoyNut Butter Co. responded to the CDC's findings by issuing a voluntary, nationwide recall in early March. The recall included only one product sold in one size of jar, with specific sell-by dates, but the CDC and FDA proceeded to warn consumers against other I.M. Healthy products, including the brand's granola.

While the SoyNut Butter Co declined to identify the supplier involved, a civil suit filed in U.S. district court named the company as Dixie Dew Products Inc. of Erlanger, Kentucky. Following inspection of their plant, the FDA closed them down fast[5]. But the lawsuits against SoyNut Butter Co. continued to roll out[6], as the number of related E. coli cases increased to 32, with incidents in 12 states. As of March 29th, nine of the victims had developed kidney failure.

The SoyNut Butter Co. announced its bankruptcy under Chapter 7 of U.S. bankruptcy law. It was on May 12, about two months after the company issued its first recall notice. Insured victims received $11.25 million.

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Take it before it's gone

Accenture[7] and others have identified this time as an inflection point for supply chain management, when brands will need to step up and become accountable to their consumers via individualized and intelligent solutions. In a business environment when CSR and ethical impact metrics[8] are increasingly important differentiators for consumers and their advocates, brands which successfully implement robust and transparent supply chain management will enjoy significant competitive edge — not only in terms of brand equity, but immediately realizable savings in logistics costs and contract management.

In many verticals the potential for first mover advantage remains available, to those who are courageous and forward-thinking enough to implement innovative solutions to complex supply chain problems.

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The Blockchain Solution

Understanding blockchain technology and benefits

Section Scan

The nature of blockchain – immutability, decentralization, public key cryptography - determines a supply chain solution driven by the technology will have inherent benefits of greater transparency, better traceability, increased speed & efficiency, and unprecedented security.

As new generations of connected and informed consumers demand new and better business intelligence solutions from brands, new technical solutions become available to provide them.

Blockchain technology unlocks the power of distributed ledgers to create a single source of authoritative data for your entire supply chain, enabling you to create trust with all users of your data — from investors to regulators to end consumers.

The benefits of a blockchain-based solution include:

Greater transparency

A blockchain database is decentralized, not owned or controlled by one specific entity. Data within a supply chain is inscribed on a ledger held by multiple parties as a single point of truth, with all entries timestamped and witnessed by the entire network of nodes. When blockchain-driven supply chain solutions are fully implemented, every party can have direct visibility of the data itself, with unprecedented granularity and confidence.

Better traceability

Because it cannot be altered, the blockchain ensures the traceability of flows and goods — it's easy to track the journey of a specific batch of ingredients, or the activity of a particular point of entry or process.

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Imagine confidently isolating a product recall to only that particular inventory directly affected, because you can accurately trace each tin can from that production batch directly to the shelf on which it now resides, **thanks to a complete and verifiable chain of custody.**

Increased speed and efficiency

Blockchain solutions remove third-party mediation, and by deploying built-in logic known as smart contracts they can automate multiple steps in the complexity of the supply chain. Instead of humans being involved in witnessing, translating, disputing, reconciling and agreeing, smart contracts are set so that once the conditions agreed upon by the users are met they execute automatically.

This innovation is the significant reason that enterprises who invest in blockchain solutions realize immediate cost savings.

Unprecedented security

Everything within the blockchain can be directly verified from a single source — but access to that source is rigidly controlled by public key cryptography. One specific quality of the cryptographic functions inherent in the blockchain itself is that each block is permanently linked to the one before it, giving blockchain the immutable nature of a 'write-only' dataset.

This creates validity throughout the supply chain, making it impossible for anyone to fudge data previously entered, whether financial records, quality test outputs, production data, inventory reports, geolocation analytics...

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Everyone benefits from blockchain

When a robust blockchain solution is in place, it's a win for all parties.

Consumers crave authentic closeness to brands

Wherever they live, consumers now have unprecedented choice of products to buy, greater access than ever before to information and news, and more ways to share their own opinion about whatever they learn, think or feel. This is transforming the relationship between consumers and brands on many levels, and directly shifting the power in favor of the discerning consumer.

And whether they want the emotional benefit of knowing their cereal ticks the organic and fair-trade boxes from crop to spoon, or they have a life-threatening condition dependent on that spoonful having provable isolation from gluten contamination, consumers are demanding more accountable products and services. **They're prepared to pay 2% to 10% more for products from companies that provide improved supply chain transparency**[9].

Today's consumer values connection with the brands they choose, and that includes visibility into the provenance of the product — being able to check it themselves creates a circularity of experience, to meet their raised expectations. They invest in relationships with brands, and feel personally slighted if a brand breaks trust with them in any way — for example, if they find themselves in receipt of counterfeit goods, or something they own is subject to a quality recall. Further, their 24/7 expectation of immediate gratification also benefits from the efficiencies of blockchain-driven supply chains, which trim delivery times and costs.

The consumer view provided by a blockchain-driven supply chain can be made visible in multiple layers of sophistication, from a summary top-line available to any curious consumers — much like the 'fair trade' or 'organic food' stamp on a package, but actually verifiable instead — through to a detailed and in-depth view which can be explored by those who require it: these could include brand ambassadors, reviewers, bloggers, or simply those who may suffer life-threatening anaphylaxis if they consume a contaminated food item.

Section Scan

It has been clear that a blockchain solution can help a brand and its partners reduce supply chain risks and operational cost while making it easier for regulators to monitor and examine compliance practices. However, one tends to ignore the immense upside unlocked by a fully transparent supply chain - brand enhancement and top line growth, along with increasing consumer trust and loyalty.

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Keep taking the tablets — even though they may be contaminated

Recalls of medical and pharmaceutical products represent some of the most worrying examples for consumers, because very often the product in question is critical to their health and well-being. Learning that the drug you depend on may be contaminated or mislabeled can cause great anxiety, and may lead patients to stop taking vital prescription medicines — before even clarifying whether the stock they hold is affected by the recall.

For example, Torrent Pharmaceuticals has expanded its recall of several Losartan potassium and potassium hydrochlorothiazide products, a generic blood pressure medication, in September 2019, issuing alerts at the consumer level, due to the detection of the carcinogen N-Methyl Nitroso Butyric acid (NMBA) above the acceptable daily intake levels mandated by the FDA in a small number of lots.

Patients have been advised to continue taking this medication until their doctors or pharmacists give them a replacement, since the risks to their health of stopping treatment could be greater than the risk from the contaminated product.

This is the second recall this year for Losartan[10], whose active drug ingredient is manufactured at Hetero Labs Limited in India. Problems caused by outsourcing manufacturers in India and China with this category are so pervasive that the FDA has prioritized approval of new generic product alternatives, to ensure panicking patients are not left with shortages of vital medication, in the face of over 75 recent recalls for blood pressure medication, according to WebMD[11].

The question for pharma brands is, will your patients come back once they have such alternatives? And how will you begin to build trust with new potential consumers?

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Brands avert disastrous damage

As commerce becomes increasingly complex and globalized, brands tread a continual tightrope between the management of costs and efficiencies, versus the intangible yet critical brand equity they are building.

The competitive edge which comes from trust is priceless, and while such intangibles can be hard to quantify, there is hard data regarding the financial impact — businesses who lose that trust sacrifice $180 m in potential revenues, according to Accenture research in 2018[12]. It doesn't matter whether that trust is damaged by the actions of third parties beyond the direct control of the business itself.

Product recalls were identified in the research as having one of the biggest impacts on trust for any corporation, on a par with major data breaches or c-suite misconduct.

Regulators shine light into dark corners

Such is the lack of visibility into present day supply chain logistics, it's easy to overlook the complexity created by the multiple links in the system, and the different frictions inherent for various stakeholders trying to monitor them.

Regulators operate within their local legislative framework, which may or may not be easily compatible with that of the jurisdictions from which goods are imported or exported, leading delays and administration at ports. While shipments wait, paperwork needs translating, data needs matching and manual reconciliation. This process is repeated at every touchpoint where one system interacts with another.

Imagine instead a single point of truth which each party can access on a need-to-know basis, and update directly in real-time... **The transformative power of the entire supply line accessing a single dataset which follows the product throughout its existence, ensuring efficiency, compliance adherence and total coverage.**

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The perfect blockchain-driven solution

Whatever some may claim, blockchain technology alone is not a magic wand for supply chain management. It's essential to look for a product which:

Is technology agnostic and flexible

As new markets emerge and open up, business competitiveness will always stem from sourcing innovative products, processes and suppliers, in an environment where speed is of the essence. It is therefore essential that the supply chain is never constrained by the system managing it — for example, being unable to trial a potential new supplier because their database is incompatible with your software.

A technology-agnostic solution with modular products is therefore prerequisite, working with different blockchains, and integrating seamlessly with ERPs and other enterprise systems.

Covers your full supply chain

In contrast to solutions provided by ERP vendors that suppliers adopt to manage their respective operations, an independent blockchain-driven solution creates a trustless environment. This gives suppliers the confidence to share information, and allows brands to gather information directly from all parties, to provide a disinterested and holistic viewpoint. This is the ideal of complete implementation towards which blockchain-driven supply chain solutions aspire.

Section Scan

Blockchain is already in use to solve supply chain issues, but to gain all the benefits mentioned in the previous section, brands will need a blockchain solution that is 1) technology agnostic and flexible; 2) covers your full supply chain; 3) facilitates compliance adherence; and 4) prevents fraud.

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Facilitates compliance adherence

By codifying compliance rules into the blockchain solution through smart contracts and integrating the requirements of every touchpoint in the supply chain in a central record, your perfect management system identifies and addresses each potential point of friction, unreliability and delay. Tackling these issues from a design perspective, while storing securely all your compliance achievements, licenses, legal and operational compliance certifications, in one place, makes compliance unavoidable.

Prevents fraud

To secure the intellectual property and personal information stored within the supply chain management system, it is essential that it is encrypted against cybersecurity vulnerabilities, and facial and biometric recognition tools to securely authenticate every party who interacts with the data.

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Genuine Transparency: the Challenge for Brands

Section Scan

Genuine transparency is not easy to achieve; brand owners will need to 1) gain internal buy-in by resolving the dilemmas visibility brings; 2) ensure successful implementation by investing in organizational changes; and 3) have supply chain partners join forces by convincing them of the benefits.

The powerful advantages of a blockchain solution will not be suitable for every enterprise.

The creation of so much transparency is a vulnerability, implementation may shed light on uncomfortable truths which were not previously visible. It might also open up trade secrets to eyes that shouldn't see certain facts.

Visibility brings dilemmas for management

Once unsavory facts surface, businesses are faced with the challenge of making immediate changes to their practices, or accepting that their product knowingly contains the products of malpractice. Resolving these ethical and logistical dilemmas involves immense complexity and numerous stakeholders.

As such it is unsurprising the idea of a transparent, tamper-proof and verifiable supply chain management system can create management resistance and anxiety, extending way beyond the procurement department.

It is vital that the system is put in place as part of a modular process of testing and penetrating each stage of a supply line, and exploring contingencies at each point. A blockchain-based supply chain management system requires genuine commitment to best practice, and will yield vital business intelligence at every step. As for trade secrets, these can be obfuscated or not reported if the company weighs the benefits versus the brand risks appropriately.

Investing in organizational change for long-term gain

In order for organizations to benefit from the multi-departmental gains of implementing a blockchain-based supply chain solution, it's essential that the implementation is:

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Understood and welcomed by the entire organization, thoroughly explained and introduced strategically

Driven by the C-suite and fully aligned with the corporate vision and mission

Adequately resourced and staged to ensure success — which may include piloting within simpler supply lines identified within the enterprise at first

Effectively monitored and reported, to ensure the benefits are understood and made visible to all internal stakeholders

Every link in the chain

Further challenges may well emerge during implementation, because of the requirements on suppliers.

The more complex the supply chain, the more suppliers it is necessary to convince of the benefits to be gained by being part of the process which will highlight best practices on a global level. In due course such transparency will surely become the gold standard for suppliers. The difficulty for early adopters in every space is the carving out of those standards, and blazing a trail where none already exists.

Information sharing and education is key, sharing the WHY, and evangelizing for the advantages of making improvements. Inevitably market forces will prevail, and suppliers will realize the revenue-enhancing and cost-elimination benefits for themselves of having visibility up the supply chain, and transparency through data sharing.

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Taking Action on Your Supply Chain Opportunities

The potential operational benefits offered to businesses that put in place an effective blockchain-driven supply chain solutions are indisputable, including:

Streamlined and efficient process management driving cost savings

Trustless blockchain-driven verification

Unprecedented visibility into every touchpoint in every tier of your value chain

An immutable, independent audit chain

The innovativeness of this approach means that those who are forward-looking and courageous enough to put transparency at the heart of their supply lines in this way will be able to offer something truly unique to their consumers and shareholders, and in many market verticals the first mover advantage is there to be taken.

Although it might require initial commitment and investment beyond a software implementation, the changes it will drive within the entire enterprise will be beneficial in unanticipated ways, and yield highly sustainable competitive edge. Because even when this level of transparency becomes the standard in every industry, lasting brand equity results from long-term perception.

Those who led the way and set the standard in each market will be viewed as trusted trailblazers and exemplars of good practice — a priceless outcome which supersedes all possible costs, and outweighs all the operational benefits.

Will your brand lead the way?

Section Scan

Be the one to lead the way and enjoy a sustainable competitive edge that others will regret not being able to have due to their late start.

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References

1. https://www.refinitiv.com/en/resources/infographics/third-party-risk-exposing-the-gaps-europe-2017/

2. https://www.agcs.allianz.com/news-and-insights/reports/product-recall.html

3. https://www.independent.co.uk/news/long_reads/smuggling-cigarettes-tobacco-counterfeit-illicit-trade-black-market-crime-a8479021.html

4. https://unctad.org/meetings/en/Contribution/DITC2019_TRACIT_IllicitTradeandSDGs_fullreport_en.pdf

5. https://www.fda.gov/food/alerts-advisories-safety-information/fda-suspends-food-facility-registration-dixie-dew-products-inc

6. https://www.generixgroup.com/us/blog/nightmare-food-recall

7. https://www.accenture.com/_acnmedia/pdf-66/accenture-future-supply-chain-pov-final.pdf

8. https://www.accenture.com/t20180326t031251z__w__/us-en/_acnmedia/pdf-74/accenture-trends-2018-report.pdf

9. https://pubsonline.informs.org/doi/10.1287/msom.2017.0685

10. https://eu.usatoday.com/story/money/2019/06/26/losartan-recall-2019-blood-pressure-drug-recalled-cancer-risk/1578603001/

11. https://eu.usatoday.com/story/money/2019/06/26/losartan-recall-2019-blood-pressure-drug-recalled-cancer-risk/1578603001/

12. https://www.businesswire.com/news/home/20181030005329/en/Companies-Accenture-Competitive-Agility-Index-Experienced-Major

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CONTACT US

We would love to hear your thoughts and answer any questions you have.
Please feel free to reach out directly to:

Mathieu Glaude in
CEO & Founder

Mathieu is the President and CEO of Northern Block.
He is a co-founder of CannaProve, a blockchain-
powered cannabis supply chain solution. He also
serves on the board of multiple emerging technology
ventures. Mathieu is an experienced software leader
with deep knowledge into both the technology and
business aspects of blockchain.

mathieu@northernblock.ca
+1 647-991-8863

Duncan Cameron in
Chief Strategist

Duncan heads product and venture strategies at
Northern Block. He is a veteran software executive
with 30 years of experience in supply chain solutions.
He has worked with over 50 businesses mainly from
ideation, with the rest in their early sales growth. Prior
to Northern Block, Duncan led business development
at a blockchain foundation.

duncan@northernblock.ca
+1 647-233-2592

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Northern Block is a leading
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blockchain technology to not
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to create new business models
and strengthen brands. Our
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mindset, mixed with a deep
commitment to understanding
clients' needs and addressing
them with a tailored approach.

Suite 201, 129 Spadina Ave, Toronto,
ON M5V 2L3

info@northernblock.ca

www.northernblock.ca