

Open Banking and the Transformation of Consumer Financial Services

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Abstract

Open banking has emerged as a major transformation in the structure and delivery of modern financial services. Traditionally, banks have maintained substantial control over customers' financial data, account relationships, and payment infrastructure. Open banking changes this model by enabling customers to authorize regulated third-party providers to access selected financial information and, in some frameworks, initiate payments through standardized application programming interfaces (APIs). This transformation has created opportunities for greater competition, innovation, personalization, financial inclusion, and consumer choice. At the same time, it has introduced new challenges involving privacy, cybersecurity, third-party risk, consumer consent, data ownership, financial exclusion, and regulatory coordination.

This paper examines the role of open banking in transforming consumer financial services from a Commerce perspective. It analyses the evolution of open banking, its technological foundations, major applications, and implications for consumer behaviour and financial-service providers. The paper argues that open banking represents a shift from institution-centred financial services toward customer-controlled and data-driven financial ecosystems. Customers can increasingly aggregate accounts, compare financial products, obtain personalized financial advice, access alternative payment services, and potentially receive more tailored credit and financial-management products. The broader transition toward open finance extends data sharing beyond conventional banking into areas such as lending, insurance, investments, and mortgages. The OECD identifies this movement from open banking toward open finance as an expansion of data access beyond payment and transaction information to other financial activities.

The analysis also highlights the risks associated with the increasing circulation of financial data. Open banking may increase competition and innovation, but consumer benefits depend on effective consent mechanisms, secure APIs, reliable data, clear liability rules, and effective regulation. The BIS has emphasized that open banking can improve efficiency and transparency while simultaneously creating privacy, cybersecurity, third-party, and business-model risks for financial institutions.

The paper concludes that open banking is likely to become an important foundation of future consumer financial services. Its long-term success will depend on whether financial ecosystems can combine data portability and innovation with strong consumer protection, cybersecurity, transparency, interoperability, and meaningful consumer control.

Keywords: Open Banking, Open Finance, Consumer Financial Services, FinTech, APIs, Financial Innovation, Data Portability, Digital Banking, Consumer Behaviour, Financial Inclusion, Data Privacy, Cybersecurity.

1. Introduction

The financial-services industry has undergone substantial technological transformation during the last two decades. Internet banking, mobile banking, digital payments, electronic wallets, artificial intelligence, cloud computing, and financial technology platforms have progressively changed how consumers interact with financial institutions.

A particularly important development is **open banking**.

Traditional banking generally operates through institution-controlled data environments. A consumer may maintain accounts with several banks, but information about those accounts remains separated within individual institutional systems. If a customer wants to compare financial products or obtain a comprehensive view of their finances, considerable effort may be required.

Open banking introduces a different model.

Under open banking, customers can authorize third-party providers to access specified financial information through secure interfaces. The BIS describes open banking as the sharing and leveraging of customer-permissioned data from banks with third-party developers and firms to create applications and services.

The underlying principle is therefore:

Consumer Data → Consumer Permission → Secure Data Sharing → New Financial Services

This represents a significant change in the relationship between consumers, banks, fintech companies, and digital platforms.

Instead of financial services being organized primarily around individual institutions, open banking allows services to be organized around the consumer.

For example, a consumer may potentially use one application to:

- view accounts from multiple banks;
- categorize expenditure;
- compare financial products;
- initiate payments;
- monitor subscriptions;
- manage budgets;
- receive personalized financial recommendations;
- access credit products.

The transformation is not purely technological. It also represents a change in the economics of financial services.

Open banking can lower barriers to market entry, facilitate competition, reduce information asymmetry, and allow specialized firms to develop products around specific consumer needs. At the same time, financial data are highly sensitive. Greater data portability creates opportunities for misuse, cyberattacks, unauthorized access, discrimination, and opaque commercial practices.

The OECD emphasizes that open banking empowers users to share and reuse financial data across digital services, while also identifying uncertainty around the interaction between data portability, privacy, data protection, and competition frameworks.

Therefore, the central issue is not simply whether banking should become more open.

The more important question is:

How can financial data be made more portable and useful while preserving consumer trust, privacy, security, and control?

This paper examines that question through a Commerce-oriented analysis of open banking and consumer financial services.

2. Concept of Open Banking

Open banking refers broadly to a financial-services model in which customers can authorize regulated third parties to access specified banking information and, depending on the regulatory framework, initiate financial transactions.

Its technological foundation is generally based on **application programming interfaces (APIs)**.

An API enables different software systems to communicate.

The simplified process is:

Bank



Secure API



Authorized Third Party



Consumer Financial Service

The consumer remains central to the authorization process.

A simplified open-banking relationship can therefore be represented as:

Consumer → Bank → API → FinTech Provider → Financial Service

The purpose is to allow financial information and services to move across institutional boundaries in a secure and standardized manner.

3. Open Banking and Open Finance

Open banking should be distinguished from the broader concept of **open finance**.

Open banking generally focuses on banking and payment-account information.

Open finance extends the concept to a broader range of financial products.

These may include:

- bank accounts;
- payments;
- credit;
- mortgages;
- investments;
- pensions;
- insurance.

The OECD describes the transition from open banking to open finance as an expansion of data access and sharing beyond payment and transaction information to additional areas of financial activity.

The distinction can be represented as:

Open Banking

Banking Data + Payment Data

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Open Finance

Banking + Payments + Credit + Insurance + Investments + Other Financial Data

This broader ecosystem could significantly reshape consumer financial services.

4. Evolution of Consumer Financial Services

Consumer financial services have evolved through several stages.

4.1 Traditional Branch Banking

Consumers interacted directly with physical branches.

Customer → Branch → Bank

4.2 Telephone Banking

Consumers gained remote access to selected services.

4.3 Internet Banking

Customers could access accounts through websites.

4.4 Mobile Banking

Smartphones made financial services continuously accessible.

4.5 FinTech

Specialized technology firms began offering:

- payments;
- lending;
- investment;
- budgeting;
- insurance.

4.6 Open Banking

Financial data could increasingly move between institutions with customer authorization.

4.7 Open Finance

The model expands toward a broader interconnected financial ecosystem.

The development therefore represents a movement from:

Institution-Centred Banking

toward:

Customer-Centred Financial Ecosystems

5. Technological Foundations of Open Banking

5.1 Application Programming Interfaces

APIs provide the technical infrastructure for secure data exchange.

They enable systems to communicate without requiring direct access to a bank's internal infrastructure.

5.2 Authentication

Consumers must be securely authenticated before financial data are accessed or transactions initiated.

5.3 Authorization

Authentication establishes identity.

Authorization determines what the third party is permitted to access.

5.4 Encryption

Financial information must be protected during transmission and storage.

5.5 Consent Management

Consumers need mechanisms to:

- grant permission;
- understand what is being shared;
- determine the duration of access;
- withdraw permission.

6. Open Banking and Consumer Empowerment

One of the principal arguments for open banking is consumer empowerment.

Traditional banking often creates informational asymmetry.

Banks know a great deal about customers' financial relationships, while customers may have difficulty comparing services across institutions.

Open banking can reduce this asymmetry.

A consumer can potentially aggregate information from several providers and use it to make more informed decisions.

For example:

Multiple Bank Accounts

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Data Aggregation

↓

Financial Overview

↓

Comparison

↓

Consumer Decision

This can strengthen consumer bargaining power.

7. Account Aggregation

Account aggregation is one of the most visible applications of open banking.

A consumer may maintain:

- a current account;
- a savings account;
- a credit card;
- an investment account.

Instead of checking each institution separately, an authorized application can present information in one interface.

This can improve:

- financial visibility;
- budgeting;
- expenditure tracking;
- financial planning.

8. Personal Financial Management

Open banking enables the development of advanced personal financial management tools.

Applications can analyze:

- income;
- expenses;
- recurring payments;
- subscriptions;
- savings;
- debt.

The system can then generate personalized insights.

For example:

Income

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Expense Analysis

↓

Budget Identification

↓

Savings Recommendation

This may help consumers improve financial planning.

9. Personalized Financial Services

Open banking can enable financial services to become more personalized.

Instead of offering the same product to every customer, providers can use authorized data to understand individual circumstances.

Potential applications include:

- personalized savings;
- tailored credit;
- investment recommendations;

- insurance products;
- cash-flow management.

Personalization can improve customer experience but also raises questions about profiling and algorithmic decision-making.

10. Open Banking and Payments

Payments are another major application.

Open banking can support account-to-account payment mechanisms that allow consumers to initiate payments directly from bank accounts through authorized third-party services.

Potential advantages include:

- convenience;
- faster payment experiences;
- reduced dependence on cards in certain transactions;
- new payment models.

This creates opportunities for fintech firms to compete with traditional payment providers.

11. Open Banking and Consumer Credit

Credit assessment is an important application.

Traditional lending decisions may rely heavily on conventional credit histories.

Open banking can potentially provide lenders with consented information about:

- income;
- regular expenses;
- account activity;
- cash flows.

This can support alternative forms of credit assessment.

The potential benefit is particularly important for consumers who have limited traditional credit histories.

However, increased data access also creates risks of excessive surveillance or discriminatory automated decision-making.

12. Financial Inclusion

Open banking may support financial inclusion by enabling innovative providers to reach consumers who are underserved by conventional financial institutions.

The BIS notes that open finance can contribute to access to finance, expanded credit, alternative payment methods, and more competitive markets.

However, digital access alone does not guarantee inclusion.

Consumers also require:

- smartphones or digital access;
- financial literacy;
- secure identification;
- affordable services;
- confidence in digital systems.

Therefore:

Open Banking + Digital Access + Financial Literacy + Consumer Protection

is more likely to produce meaningful inclusion than open banking alone.

13. Open Banking and Consumer Financial Behaviour

Open banking may change financial behaviour in several ways.

13.1 Increased Financial Awareness

Aggregated financial information may help consumers understand their spending.

13.2 Improved Budgeting

Consumers can identify recurring expenses.

13.3 Increased Price Comparison

Consumers can compare financial products more easily.

13.4 Increased Switching

Lower switching barriers may encourage consumers to move between providers.

13.5 Greater Personalization

Financial recommendations may become more closely aligned with individual circumstances.

14. Consumer Choice and Competition

Open banking can change competitive dynamics.

Traditional banking is often relationship-based.

Open banking enables consumers to move financial data between providers more easily.

This can reduce switching costs.

The competitive mechanism can be represented as:

Data Portability

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Lower Switching Costs

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Greater Consumer Mobility

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Increased Competition

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Better Services / Prices

However, these outcomes depend on effective implementation.

If only a small number of firms dominate data aggregation or digital interfaces, new forms of concentration may emerge.

15. Impact on Traditional Banks

Open banking challenges the traditional banking model.

Banks historically derive value from:

- customer relationships;
- account information;
- transaction data;

- payment infrastructure;
- cross-selling.

Open banking can reduce the exclusivity of these advantages.

Third-party firms can build services using customer-authorized bank data.

Banks therefore face a strategic choice:

Defensive Approach

Protect traditional relationships.

or

Platform Approach

Participate actively in open financial ecosystems.

The second approach may involve banks developing APIs, partnerships, fintech collaborations, and new digital services.

16. Impact on FinTech Companies

Open banking creates opportunities for fintech firms because they can build specialized services without establishing a complete traditional banking infrastructure.

Potential fintech applications include:

- budgeting;
- payments;
- lending;
- investment;
- financial comparison;
- subscription management;
- accounting;
- financial wellness.

This can increase innovation.

However, fintech providers also face significant regulatory and cybersecurity responsibilities.

17. Data Portability

Data portability is central to open banking.

The underlying principle is:

The Consumer Should Be Able to Authorize the Movement of Their Financial Data

The OECD identifies data portability as a mechanism that can empower users to share and reuse financial data while also raising questions concerning privacy, security, regulation, and competition.

The quality of data portability depends on:

- standardized formats;
 - reliable APIs;
 - interoperability;
 - clear consent;
 - secure authentication.
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18. Privacy Concerns

Financial information is highly sensitive.

Open banking may involve access to:

- income;
- spending;
- debts;
- subscriptions;
- financial institutions;
- payment patterns.

If poorly governed, such information could be used for:

- unauthorized marketing;
- profiling;
- discriminatory decisions;
- financial manipulation.

Therefore, data sharing should follow principles of:

- purpose limitation;
- data minimization;
- informed consent;
- secure storage;
- controlled access.

19. Cybersecurity Risks

Open banking increases connectivity.

Connectivity creates innovation opportunities but also expands the potential attack surface.

The BIS has highlighted cybersecurity and third-party risk as important challenges associated with open banking.

Potential threats include:

- API attacks;
- credential theft;
- identity fraud;
- unauthorized data access;
- malicious applications;
- transaction manipulation.

Security must therefore be integrated into open-banking architecture rather than added afterward.

20. Consumer Consent

Consent is a fundamental principle.

However, consent should not be treated as a simple "accept" button.

Effective consent should allow consumers to understand:

- what data are being shared;
- who receives them;

- why they are needed;
- how long access lasts;
- how access can be withdrawn.

Poorly designed consent mechanisms can result in consumers agreeing to data sharing without understanding the consequences.

21. Consumer Trust

Trust is likely to determine the long-term adoption of open banking.

Consumers must trust:

- banks;
- fintech providers;
- data aggregators;
- payment providers;
- regulators;
- technology systems.

Trust can be strengthened through:

- transparent data policies;
- visible authorization controls;
- strong security;
- clear liability rules;
- easy complaint mechanisms.

The BIS has emphasized that financial inclusion should be accompanied by financial consumer protection and sound regulation because access alone does not necessarily guarantee financial well-being.

22. Open Banking and Financial Literacy

Consumers need sufficient knowledge to benefit from open banking.

Financial literacy becomes increasingly important when consumers must decide:

- whether to share data;
- which provider to trust;
- which financial product to select;
- how to interpret recommendations.

Therefore, financial education should accompany technological development.

A useful framework is:

Digital Literacy + Financial Literacy + Data Literacy

These capabilities can help consumers make better decisions within open financial ecosystems.

23. Artificial Intelligence and Open Banking

AI and open banking are increasingly complementary.

Open banking provides structured financial data.

AI can analyze that data.

The combined model can support:

- personalized financial advice;
- fraud detection;
- spending analysis;
- credit assessment;
- financial forecasting;
- automated savings.

The relationship can be represented as:

Open Banking Data

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AI Analytics

↓

Personalized Financial Insight

↓

Consumer Decision

However, AI introduces additional concerns regarding explainability, bias, and accountability.

24. Open Banking and Fraud Detection

Transaction-level data can support fraud detection.

AI systems can identify unusual patterns.

For example:

Normal Behaviour

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Unusual Transaction

↓

Risk Detection

↓

Additional Verification

This can improve financial security.

However, false positives can inconvenience legitimate consumers.

The challenge is to balance:

Security

with

Customer Convenience

25. Open Banking and Financial Health

Open banking has the potential to move financial services beyond basic financial inclusion toward broader financial health.

Consumers can use aggregated information to understand:

- whether they are overspending;
- whether subscriptions are unnecessary;
- whether savings are sufficient;
- whether debt payments are sustainable.

The BIS has argued that financial inclusion should be complemented by financial health and consumer protection.

Thus, the future of open banking should not be measured solely by the number of connected accounts.

It should also be evaluated by whether consumers achieve better financial outcomes.

26. Open Banking and Small Businesses

Although this paper focuses on consumer financial services, open banking also has important implications for small businesses.

Businesses can use connected financial data for:

- cash-flow management;
- accounting;
- payments;
- lending;
- financial forecasting.

For small enterprises, improved access to financial information may reduce administrative burdens.

The broader open-finance ecosystem could therefore connect consumer and business financial services.

27. Economic Implications

Open banking can influence the economics of financial services through several channels.

Lower Transaction Costs

Automated data exchange can reduce administrative work.

Lower Search Costs

Consumers can compare services more efficiently.

Reduced Information Asymmetry

Authorized data can improve financial assessment.

Increased Competition

New providers can enter financial markets.

Product Innovation

Specialized firms can create new services.

Consumer Switching

Data portability can reduce switching barriers.

These mechanisms can contribute to a more competitive financial-services market.

28. Risks of Market Concentration

Open banking does not automatically guarantee competition.

New intermediaries may become powerful.

For example:

Banks

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Data Aggregators



Financial Platforms



Consumers

If a small number of platforms control access to consumers, market concentration could emerge at the intermediary level.

Competition policy must therefore consider not only traditional banking concentration but also digital platform power.

29. Regulatory Framework

Open banking requires coordination among several regulatory areas.

These include:

- banking regulation;
- payment regulation;
- data protection;
- cybersecurity;
- consumer protection;
- competition policy.

A fragmented regulatory environment can create uncertainty.

The OECD emphasizes the importance of coordinated approaches involving financial, competition, and data-protection authorities in addressing open-banking challenges.

30. Global Development of Open Banking

Open banking has developed differently across jurisdictions.

Some countries have adopted regulatory frameworks requiring banks to provide standardized access.

Others have relied more heavily on market-led approaches.

The BIS reports that open finance initiatives are being explored across many jurisdictions and that approaches vary significantly in regulatory design, technical standards, and infrastructure.

The BIS's recent work notes that by 2024, 95 jurisdictions had some form of open-banking or open-finance policy framework.

This demonstrates that open financial ecosystems are becoming a significant global policy trend.

31. Open Banking in Emerging Economies

Open banking can have particular importance in emerging economies.

Traditional financial systems may have:

- limited branch coverage;
- high transaction costs;
- underserved populations;
- incomplete credit histories.

Digital financial infrastructure can help expand access.

However, emerging economies may also face:

- digital literacy gaps;
- cybersecurity limitations;
- infrastructure constraints;
- regulatory capacity challenges.

Therefore, policy must be adapted to local institutional conditions.

32. Open Banking and Consumer Welfare

The ultimate economic question is whether open banking improves consumer welfare.

Potential benefits include:

- lower prices;
- better financial products;
- greater convenience;
- improved financial management;
- increased access to credit;
- stronger competition.

Potential costs include:

- privacy loss;
- fraud;
- data misuse;
- algorithmic discrimination;
- consumer confusion.

Therefore:

Consumer Welfare = Benefits of Innovation – Costs and Risks of Data Sharing

Effective regulation can increase the benefits while reducing the risks.

33. Challenges to Open Banking

33.1 Data Security

Financial data must be strongly protected.

33.2 Consumer Understanding

Consumers may not understand data-sharing permissions.

33.3 Fragmented Standards

Different technical systems can reduce interoperability.

33.4 Third-Party Risk

Consumers may face risks from providers outside traditional banking.

33.5 Liability

Responsibility for unauthorized transactions must be clearly defined.

33.6 Digital Exclusion

Consumers without adequate digital access may be left behind.

33.7 Low Consumer Engagement

Consumers may not actively use available open-banking services.

34. Future of Consumer Financial Services

The future may involve a highly interconnected financial ecosystem.

A consumer could use one digital interface to manage:

Banking

-

Payments

-

Credit

-

Investments

-

Insurance

-

Budgeting

-

Financial Planning

AI could further automate these services.

The long-term model may therefore become:

Open Finance + AI + Digital Identity + Real-Time Payments

This could produce a highly personalized financial ecosystem.

35. Future Research Directions

Future research could investigate:

1. Open banking and consumer trust.
2. Open banking and financial literacy.
3. Open banking and consumer switching behaviour.
4. Open banking and financial inclusion.
5. Open banking and credit access.
6. Open banking and personalized financial services.
7. Open banking and AI-based financial advice.
8. Open banking and cybersecurity.
9. Data portability and consumer welfare.
10. Open banking and competition.
11. Open finance in emerging economies.
12. Consumer attitudes toward financial-data sharing.
13. Open banking and financial health.
14. API standards and interoperability.
15. Privacy-preserving financial technologies.
16. Open banking and digital identity.
17. AI-enabled open finance.
18. Open banking and small-business finance.

36. Recommendations

For Banks

Banks should:

1. develop secure and reliable APIs;
2. improve data accuracy;
3. provide transparent consent mechanisms;
4. invest in cybersecurity;
5. collaborate with fintech companies;
6. develop customer-centric open-finance services.

For FinTech Companies

FinTech providers should:

- minimize unnecessary data collection;
- clearly communicate data usage;
- strengthen cybersecurity;
- provide understandable financial recommendations;
- implement strong authentication.

For Consumers

Consumers should:

- understand data permissions;
- use trusted providers;
- regularly review authorization;
- revoke unnecessary access;
- monitor financial accounts;
- improve financial and digital literacy.

For Regulators

Regulators should:

- establish interoperable standards;
- strengthen consumer protection;
- clarify liability;
- monitor third-party providers;
- coordinate data, financial, and competition regulation;
- encourage secure innovation;
- prevent discriminatory data practices.

37. Integrated Conceptual Framework

The transformation can be represented as:

Consumer Financial Data

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Consumer Consent

↓

Secure API Infrastructure

↓
Authorized Third-Party Access

↓
Data Aggregation

↓
AI / Analytics

↓
Personalized Financial Services

↓
Consumer Decision

↓
Financial Outcome

The entire process is moderated by:

Privacy + Cybersecurity + Regulation + Financial Literacy + Consumer Trust

The expected outcomes are:

Competition + Innovation + Convenience + Financial Inclusion + Financial Health

38. Conclusion

Open banking represents a fundamental transformation in the organization of consumer financial services. Traditional banking has historically been structured around institutions that control customer accounts, data, and financial relationships. Open banking introduces a more consumer-centred model in which customers can authorize the controlled sharing of financial information with third-party providers.

The economic significance of this transformation extends beyond technical data exchange.

Open banking can reduce information asymmetry, lower switching costs, support competition, encourage fintech innovation, and provide consumers with more personalized financial services. Account aggregation, financial management, alternative payments, credit assessment, and personalized recommendations are among the areas in which open banking can create value.

The movement toward open finance extends this transformation further by incorporating a broader range of financial products and information. The OECD identifies this evolution as a transition from data-sharing arrangements focused on banking and payment information toward broader financial data ecosystems.

However, openness also creates vulnerability.

Financial data are highly sensitive, and increased connectivity creates additional privacy, cybersecurity, and third-party risks. The BIS has identified data-sharing, cybersecurity, reputation, and third-party risk as significant considerations associated with open banking.

Consumer consent is therefore central.

A sustainable open-banking system should not simply make data technically portable. It must ensure that consumers understand how their data are being used and retain meaningful control over authorization.

Open banking should also be evaluated through the concept of **financial health**, rather than financial inclusion alone. Greater access to financial services is valuable only when those services are safe, appropriate, affordable, and capable of improving consumer outcomes.

Artificial intelligence is likely to further accelerate this transformation. AI can analyze open-banking data to provide personalized insights, identify unusual transactions, support financial planning, and improve product matching. At the same time, AI introduces additional challenges involving bias, transparency, explainability, and automated decision-making.

The future of consumer financial services will therefore likely depend on the interaction of:

Open Banking + Open Finance + Artificial Intelligence + Secure APIs + Digital Identity + Consumer Protection

The most successful financial ecosystem will not necessarily be the one that collects the largest quantity of data. It will be the one that uses authorized data most effectively while protecting consumer rights and maintaining trust.

Open banking should ultimately be understood not simply as a technological innovation but as a **structural transformation of the financial-services marketplace**.

Its central promise is to shift financial services from:

Institution-Controlled Data

toward:

Consumer-Controlled Financial Data

and from:

Product-Centred Banking

toward:

Consumer-Centred Financial Ecosystems.

If supported by effective regulation, secure infrastructure, transparent consent, strong competition, and adequate financial literacy, open banking can become a foundation for more innovative, inclusive, personalized, and competitive consumer financial services.

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