

EXECUTIVE SUMMARY

Intraday Liquidity Management towards Europe 2020:

T2S, Repo Market and Blockchain

YEAR 2016 RESEARCH

BANKING DIVISION



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Strategy, innovation and finance.

These are the three basic elements of CeTIF activities

The Research Centre on Technology, Innovation and Financial Services (CeTIF), which has been conducting studies and promoting research on the dynamics of strategic and organisational change in the financial, banking and insurance sectors since 1990.

Every year CeTIF activates more than 15 research facilities, such as Competence Centres and Observatories, in which the more than 20,000 professionals who are part of the network can participate, and organises over 10 workshops focusing on banks, insurance firms and non-financial companies with the aim of fostering the exchange of experiences and the adoption of innovative practices among participants.

Research activities are focused mainly on the effects of the development of new strategies, innovation legislation, the study of organisational practices and processes and the effects of the introduction of technological innovations.

The institutional partners of CeTIF include Bank of Italy, IVASS, ABI, ANBP, ANIA, AIPB and CONSOB.

Within CeTIF, CEFIRS - Centre for European Financial Regulations Studies - there is a Permanent Observatory on regulation in the financial, banking and insurance sectors.

There is also the CeTIF Academy, a university-level institute of higher education, which aims to convey to top and middle level managers the knowledge gained in over twenty years of research.

CeTIF is also a founding member of FIT: The European Association of Research Centres on finance and information technology.

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YEAR 2016

BANKING DIVISION

Intraday Liquidity Management and T2S: *T2S, Repo Market and Blockchain*

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We would like to thank TAS Group and the Commissione Mercato Monetario Assiom Forex for their effective collaboration during the set-up and implementation of the research.



The background of the slide is a dark blue-tinted collage of financial and business-related imagery. On the left, a close-up of a calculator's keypad is visible, showing buttons for numbers 1 through 9, 0, and mathematical symbols like '+', 'x', and 'M+'. In the center, a line graph is plotted on a grid, with the y-axis labeled with values 1,750, 2,000, 2,250, 2,500, 2,750, and 3,000. The graph shows two fluctuating lines. On the right, a stack of several coins is arranged in a slightly curved line. The overall aesthetic is professional and data-oriented.

EXECUTIVE SUMMARY

CONTEXT AND OBJECTIVES OF THE RESEARCH

The market scenario of recent years has been characterized by severe financial crises and increasingly stringent regulatory pressures; that is why all the banking institutions have been forced to review their **Collateral Management** as well as **Liquidity Management policies**.

In this context, T2S has assumed a central role within the European harmonization cycle that is bringing significant changes in the structure of payment systems and in intraday liquidity management.

Studies conducted by **CeTIF in partnership with TAS Group** have set the objective of monitoring the evolution of these phenomena, which **have led to profound changes in the operating model of Italian Treasury operations**.

In particular, the research conducted in 2015 made it possible to monitor the projects and the expected impacts on the management of liquidity and collateral held within the Italian Bank Treasuries in the light of the new securities settlement platform implementation.

With the analysis it was decided to monitor the **state of the art in relation to liquidity and collateral management activities**, trying to understand what were the **aspects of greatest interest** in terms of features offered and investment, by identifying **areas that need improvement to ensure efficient management of the treasury processes themselves**.

With specific reference to these aspects it emerged that the Treasury of Italian banks have reached high levels of efficiency with regard to intraday liquidity management. However, there are areas for improvement on some technological aspects of integration of the operating model.

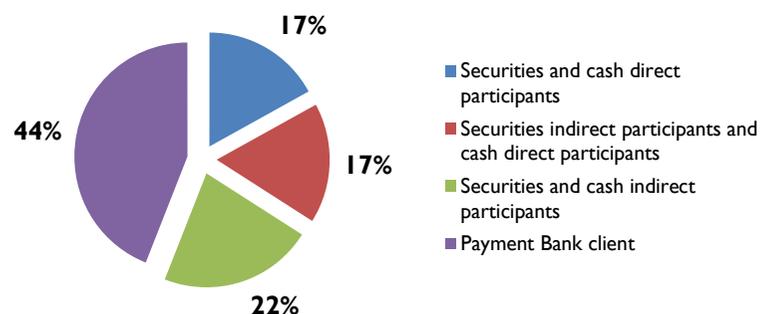
Within this context also increasingly stringent European regulations and expansionary monetary policy are to be taken into account, which will bring further changes in the operating model of the Treasury.

This has laid the foundation for research in 2016, in which the

present state of the work was investigated in order to **understand the strategic implications that new regulatory requirements will have on Italian bank treasuries**.

The survey questionnaire that followed was compiled by a panel that saw the participation of 18 Italian financial institutions, which together make up the major part of liquidity held by the Italian banking system.

Figure 1 - Strategies for participation in T2S – panelists' breakdown



Source: CeTIF 2016

The areas of investigation were: Current and expected benefits of T2S, Expected running costs of **T2S** and evolution in the competitive landscape; Changes in liquidity management in the light of **BCBS 248**; Impact of **Basel III regulation** on Italian bank Treasury and Repo Market; Changes in technological- operational and competitive environment in view of the **Vision 2020** of the ECB.

The following pages are designed to provide an overview of the most significant aspects arising during the study:

"Intraday Liquidity Management towards Europe 2020: T2S, Repo Market and Blockchain "

The Centre's objective is to monitor the evolution of the phenomena that are leading to profound changes in the operating model of the Italian Treasury.

Collateral and Liquidity Savings are perceived as benefits achievable through T2S while in terms of cost reduction remains ample room for improvement

EXPECTED AND ACHIEVED BENEFITS OF T2S

In terms of the types of benefits, the institutions recognize T2S' ability to improve the management of collateral (fully achievable benefit in Wave 5, upon completion of the migration, according to the 32% of respondents) and the possible reduction of the need for prefunding cash thanks to auto-collateral use, in T2S already feasible, even in Wave 3, according to 67% of the participants.

A further interesting fact to be emphasized, is the advantage of being able to concentrate all operations on a single DCA. Indeed, this model will be pursued by 58% of respondents within Wave 5.

Less perceived as realizable benefits are: reduction of risks on cross-border transactions, (perceived as fully achievable only by 7% of

respondents) and the increase of the same, that no institution sees realized to date (Wave 3) and only 15% of the institutions sees such increase as a milestone reachable in 2017 (Wave 5). One possible explanation of this poor perception of the benefits associated with cross-border transactions is probably related to the current configuration of the Italian market, highly unbalanced on the domestic side; T2S should in the future facilitate access to various cross-border markets.

Further analysis confirmed that the financial institutions who expect more achievable benefits are large institutions and have opted for a direct participation in at least the cash part.

Figure 2 – COLLATERAL SAVINGS

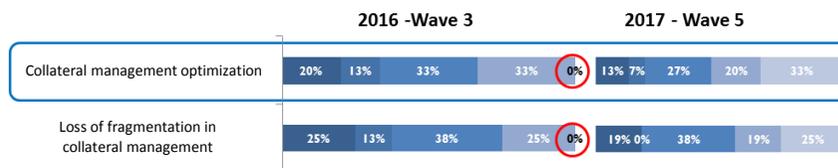
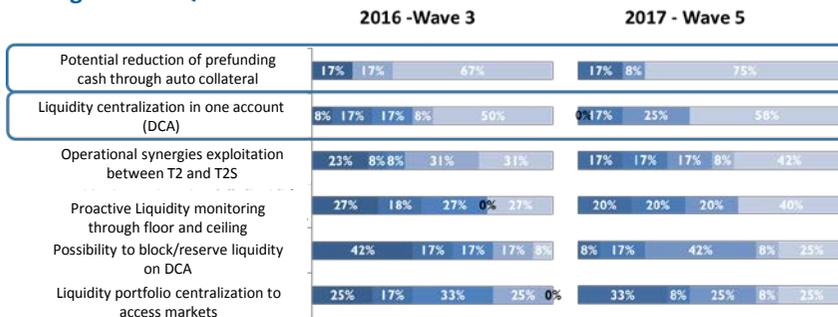


Figure 3– LIQUIDITY SAVINGS*



* Only 14 respondents because Payment Bank client participants declare to have obtained liquidity savings through their own Custodian

■ 1 = not perceived benefit ■ 2 = perceived benefit however not assessable in its implementation ■ 3 = benefit achievable depending on internal and external conditions
 ■ 4 = benefit is partially achieved but depends on further internal interventions ■ 5 = benefit is/ will be fully achieved and implemented

Figure 4 – SAFETY BENEFITS

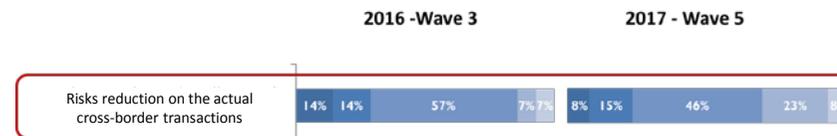
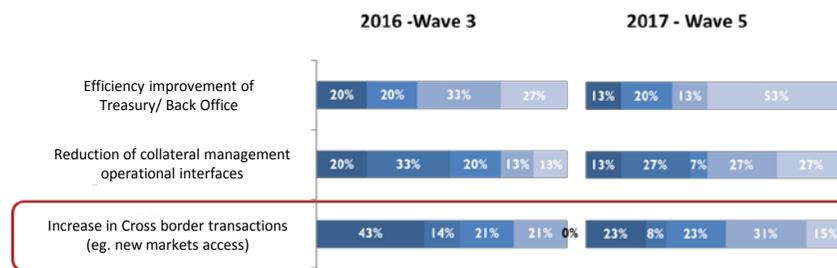


Figure 5 – SIMPLIFY OPERATIONS



RUNNING COSTS OF T2S AND EVOLUTION OF COMPETITIVE SCENARIO

Figure 6 – Due to the heavy investments agreed by the ECB for the implementation of the European securities settlement platform, general expectations are viewed towards an increase or a maintenance of current levels of costs after Wave 5. Figure 6 represents those expectations.

In particular, it was found that the majority (53%) of respondents expect that the costs of the custodian and settlement fees will be much higher for all countries (Wave 5) once migration to T2S has been completed.

Signs of slight improvement can instead be seen regarding the costs of liquidity and collateral (already perceived benefits to date) and also for internal operating costs. A significant percentage of institutions expect an increase of organizational and IT costs even after Wave 5.

Figure 6 - Running costs of trading post in Wave 5

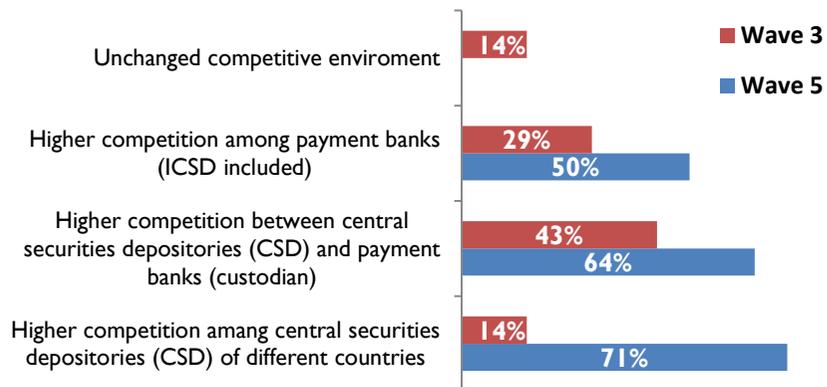
	↓	=	↑
CUSTODY AND SETTLEMENT FEES	7%	40%	53%
ORGANIZATIONAL COSTS	36%	29%	36%
IT COSTS	21%	50%	29%
INTERNAL OPERATIONAL COSTS	29%	50%	21%
LIQUIDITY/ COLLATERAL COSTS	36%	57%	7%

Source: CeTIF 2016

Faced with this scenario there are amazing expectations of the competitive environment evolution (Figure 7), that address a change in favor of a strong increase in competition among the market players. 71% of the system expects in fact more competition between central securities depositories (CSD) of the different countries once migration is completed (Wave 5) and 64% believe that this competition will also extend to payment banks (Custodian).

The Treasuries of the Italian banks were also asked to indicate which new markets and instruments may be relevant for the development of T2S in order to identify which strategic elements could affect the perception of the benefits associated with the use of the platform. 65% of the system indicates Eurobonds as instruments of greater importance. Currencies other than the euro along with access to the Scandinavian markets are of marginal importance in evolutionary terms.

Figure 7 - Evolution of the competitive environment



Source: CeTIF 2016

The system's expectations are focused on increasing or maintaining current levels of cost after 5 Wave

A significant part of the Treasury of the Italian banks seems to interpret the recommendations of BCBS248 as a real opportunity for improvement of the management processes.

INTRADAY LIQUIDITY MANAGEMENT IN THE LIGHT OF BCBS 248

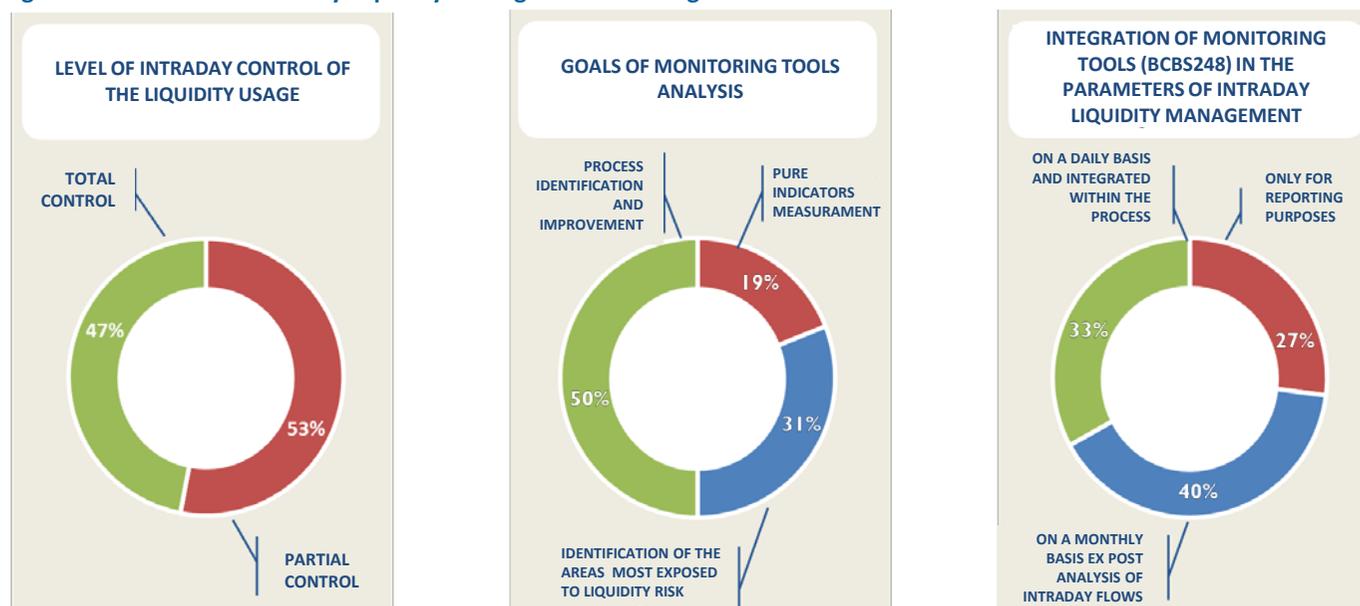
The need to activate a longstanding practice of intra-day monitoring was initially born with the BCBS 144 (*Sound Principles*) of September 2008. In it 17 guidelines were identified for proper risk management of liquidity and collateral by banks. Following the financial crisis of 2007/2009, on the initiative of the Basel Committee seven monitoring indicators were defined in the BCBS Document 248 - *Monitoring tools for intraday liquidity management* (last revision in 2013) -. In view of this reporting requirement, scheduled for banks from next year (for some banks already this year), the research wanted to analyze the state of the art and the impact of new regulation on the effective operational practice. The research showed that the level of attention of Treasuries to intraday liquidity is high and progressively growing, both for the new mandatory reporting, and for the evaluation of stress scenarios and implications of Exposure and Liquidity Risk.

Results also showed that the implementation of internal monitoring goes beyond the regulators' needs. In fact, monitoring seems to also affect the banks not subject to reporting and, even in the mandatory contexts, it can be adopted to:

- control the intraday liquidity usage for the most critical cut-offs (53% of the sample);
- identify possible improvements of the current processes supporting liquidity management (50% of the sample);
- analyze ex-post actual intraday flows (40% of the sample) or optimize their effective management during the business day (33% of the sample).

Finally, results showed the need to adapt in the short term internal policies for liquidity management as a result of changes linked to the regulation (50% of the sample).

Figure 8 – Change directions for the Intraday Liquidity Management in the light of BCBS 248



IMPACT OF REGULATION ON BANK TREASURIES AND ON THE MARKET REPO

The Italian bank Treasuries will have to review their business models in the light of the regulation and its effects on the Repo Market. For this it is interesting to measure the elements that will experience major discontinuities through four areas of impact of the regulation analyzed in the paragraphs below.

MARKET IMPACTS

- 75% of the system believes that the regulation effect will be priced in the spread.
- 59% of the institutions believes that *lower grade* collateral will be accepted in order to obtain a better remuneration (eg. at least equal to / close to zero).

CENTRAL BANKS IMPACTS

- 62% of the Treasuries believe that the possible new role of the ECB as a "major player in the 'SFT market" could harm the Repo market.
- 50% of the system believes that the substantial reduction of HQLA due to the ECB effect resulting from the Public Sector

Purchase Program (PSPP) will produce in the future a considerable shortage of outstanding securities.

IT IMPACTS

- The 88% of the system believes that technology will play an increasingly important role in the future.
- 59% of institutions believe that technological innovation will, as a consequence, improve the pricing on the market.

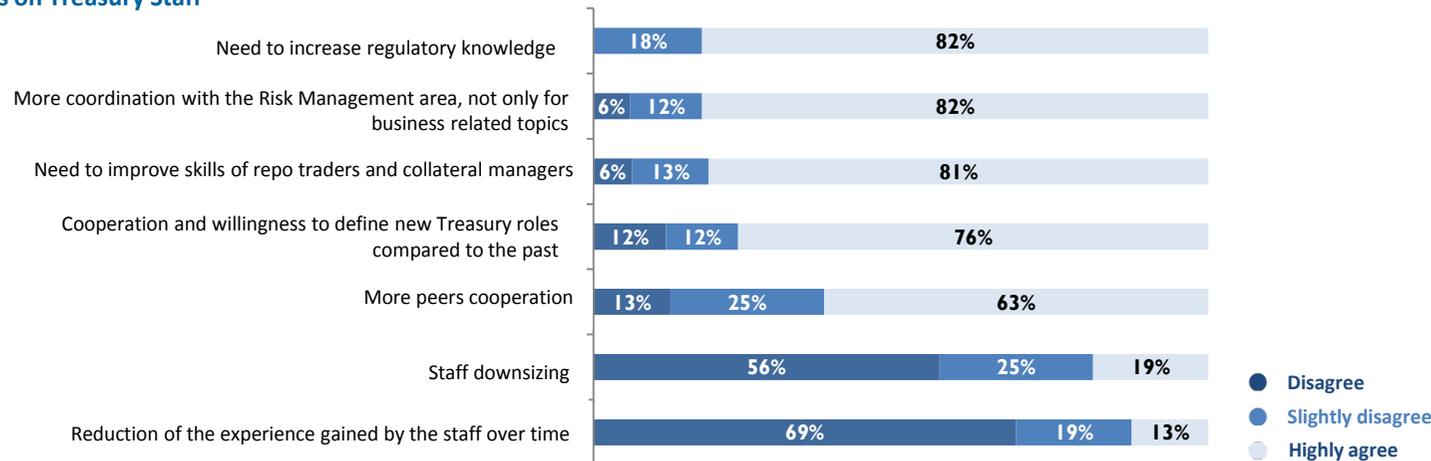
FUTURE CHALLENGES AND OPPORTUNITIES

- 62% of institutions believes that after 2019 the Repo desk, necessarily renovated, will create new opportunities.
- 50% of the Treasuries believe that new market infrastructures may arise with the need to design new strategies.

The figure below (Figure 9) shows instead the impact on the Treasury staff. Interestingly, it is expected a transformation in terms of improved skills, however not any reduction of the Treasury personnel.

The Italian banking Treasuries will have to review their business model in the light of regulation and the effects on Repo Market.

Figure 9 - Impacts on Treasury Staff



Source: CeTIF 2016



Many are the actions that the system sees as desirable even if it is necessary to consider the legal and governance aspects related to innovation.

VISION 2020

The Italian bank Treasuries expect strong innovations in the European market infrastructures. In particular, some changes promoted by the European Central Bank (ECB) and known as 'Vision 2020' are envisaged, described in the document "Eurosystem's vision for the future of Europe's financial market infrastructure", subject to recent consultation on the market.

The research found that there are many actions that the system sees as desirable through the advocated support of new technologies and innovations, as long as governance and legal aspects related to

innovation itself are duly taken into account.

The desirable interventions, summarized in Figure 10, relate in particular to:

- technical consolidation between T2 and T2S with the alignment of their functionality;
- the birth of a potential multicurrency RTGS;
- Instant Payments Project support;
- Potential applications of the new Blockchain technology.

Figure 10 - desirable interventions and critical issues for market infrastructures in view of the Europe 2020

DESIRABLE INTERVENTIONS

- SYNERGIES BETWEEN T2S AND T2 and CONSOLIDATION OF THE TECHNICAL INFRASTRUCTURES between RTGS and SECURITIES SETTLEMENT SYSTEM
- SUPPORT OF NEW TECHNOLOGIES

- Review of the functional strategy in terms of CREATING A MULTICURRENCY RTGS
- ACCESS to the MULTICURRENCY INTRADAY CREDIT of the CENTRAL BANK

- SUPPORT by the EUROSISTEM to the INSTANT PAYMENT project
- Resulting EXTENDED OPERATIONS 365x7x24

CRITICAL ISSUES

- ALIGNMENT OF RUNNING COSTS OF T2-T2S (required according to 38% of the institutions)
- Careful evaluation of GOVERNANCE AND LEGAL ASPECTS RELATED TO INNOVATION

- The review will bring benefits ONLY IF IMPLEMENTED ON A LARGE SCALE (BEYOND THE T2S PERIMETER)
- Provide access to intraday credit of the central bank REGARDLESS FROM THE GEOGRAPHICAL LOCATION

- MUST BE BOUNDED TO THE PRESENT STRUCTURE OF T2
- CAREFUL EVALUATION OF LEGAL, POLICY AND OPERATIONAL ASPECTS

BLOCKCHAIN

Reference is made to Blockchain to identify new technologies, initially introduced by Bitcoin, which make use of distributed and open accounting data (distributed ledger) through a chain of blocks of related information. The ECB's consultation document on the future of Target 2 has introduced Blockchain as a possible evolution of the European Payments Infrastructure.

The survey has tried to picture the perception of this innovation in the Treasury of the Italian banks and the outcome is a still uncertain framework, coherent with the stage of introduction of these technologies. The application hypothesis seem identified,

with 71% of the sample identifying the settlement area and the 40% the correspondent banking. There is less clarity on the other hand as to the greatest benefits achievable through technology, in fact, the standard recognizes almost all of them in equal measure.

The perceived main risk is the proliferation of settlement platforms, recognized by 53% of the sample, even if the introduction of Blockchain technology was presented as the institutional hypothesis by the Eurosystem himself.

Figure 11 - Advantages, risks and scope of the Blockchain technology

ADVANTAGES



RISKS



AREAS OF APPLICATION



The emerging picture is a still uncertain one with regard to Blockchain, in coherency with the stage of introduction of these technologies.

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TAS Group delivers software solutions for electronic money, payment systems, capital markets and ERP. Our offices span 7 countries but our secure solutions manage financial transactions worldwide. We strive to simplify the way private enterprise, public sector, commercial and central banks interact with their customers, stakeholders and technology systems. Our highly experienced team of business analysts and software engineers are focused on rethinking, reimagining and revolutionizing commercial business processes for digital and mobile integration. Trusted by European Central Banks to manage millions of financial messages each day, our 30-year reputation in the market and outstanding SWIFT expertise has made us an internationally preferred partner in the financial industry. Our securities software is leading the way for Target2-Securities regulations in Europe while our 12 years of experience in EMV card payments is helping US businesses and institutions implement smooth migrations. Today, over 100 million chip cards are managed on TAS solutions.

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