



EUROPEAN CENTRAL BANK

EUROSYSTEM

T2S Special Series

One year of full operation

Issue 7, December 2018



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target | T2S
services

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1 The road travelled



*Marc Bayle de Jessé
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How did the idea to create T2S first arise? What was the state of the securities market in Europe at the time? What were the challenges and which aspects were considered advantageous?

Almost 20 years ago, at the start of the new millennium, the vision of an integrated Europe seemed well on its way to finally becoming reality. The euro had been introduced across 11 European countries and the TARGET real-time gross settlement system had been launched to settle large-value payments in the new currency. However, at the European Central Bank (ECB) we were aware that this was just the beginning of a long journey towards the creation of a truly domestic market in Europe.

Despite money flowing freely in the interbank market, a number of significant barriers remained, making the settlement of securities inefficient. There were simply too many intermediaries interacting with various legacy systems from each national market. This fragmentation in Europe's securities settlement market was complicating the post-trade processing of cross-border securities transactions and causing financial risk and high fees. We knew that we had to create a pan-European platform, similar to TARGET, which would help remove these barriers by harmonising the European securities market.

I vividly remember presenting the concept for what would later become TARGET2-Securities (T2S) on a 2005 Sunday evening during a dinner that was hosted in Frankfurt by former ECB Executive Board member Gertrude Tumpel-Gugerell. The initial reaction was one of cautious curiosity as my counterparts were taken aback by the bold idea of merging the two existing types of models for securities settlement. Timing was also tricky. We didn't know it then but the financial crisis was looming and subsequent political tensions could have stymied discussions. However, it was clear that there was no way back, and so, in July 2006 the Governing Council of the ECB launched an investigation on the feasibility of T2S. The project was approved in the summer of 2008, following two years of constructive and intense discussions with market participants on the user requirements of T2S. The journey towards a European single market was heading for a new milestone, one that we did

reach in June 2015, after seven years of unprecedented collaboration between Europe's public and private sectors.

After the idea was put on paper, what were the events leading to the realisation of the project?

When the Governing Council of the ECB officially approved the launch of T2S, it assigned the platform's development and operations to four central banks (4CB): the Deutsche Bundesbank, the Banco de España, the Banque de France and the Banca d'Italia. The project was backed by all of the euro area central securities depositories (CSDs) at the time, and also received full political support from the European Commission and European Parliament, including the Economic and Financial Affairs Council that insisted on the platform's built-in multi-currency function.

The development phase of T2S began properly in April 2009. Between July 2009 and July 2010 30 CSDs across Europe signed a memorandum to enter into a contractual relationship with the Eurosystem – i.e. the ECB and the national central banks of the euro area countries. Soon thereafter, the ECB Governing Council set up the CSD Contact Group (CCG –known today as the CSD Steering Group), a high-level negotiation forum for all CSDs that had signalled their intention to join T2S. The CCG and the Eurosystem negotiated and prepared the T2S Framework Agreement, which was signed in May 2010 and represented a crucial step in the progress of the T2S project, defining the legal relationship between the Eurosystem and each CSD that joined T2S. Built on a high degree of transparency, the Framework Agreement stipulated that T2S would be delivered at the lowest cost possible, with the revenues from the volumes settled via the platform being used to meet development and operating costs.

On the regulatory side, T2S was greatly supported by the Central Securities Depositories Regulation (CSDR), which was implemented by the European Union across all Member States on 17 September 2014. The CSDR introduced provisions for shorter settlement periods, mandatory buy-ins and cash penalties to address settlement failures. The objective was to establish a level playing field among CSDs in Europe by creating an integrated market for securities settlement with no distinction between national and cross-border securities transactions.

The T2S platform was launched on 22 June 2015 with the first set of CSDs and their market participants migrating to the platform. The full migration took place in waves over the following two years to ensure that each CSD and its community had a smooth transition to the platform. The final wave was successfully concluded on 18 September 2017 but the T2S journey continues to this day. On 29 October 2018, T2S entered a new stage by activating its multi-currency function and beginning to settle securities transactions in Danish krone.

At this point, I want to emphasise that T2S was conceived as a multi-currency system from the beginning. Non-euro area central banks that bring their currency to the platform have the same level of influence within T2S as the Eurosystem central banks in terms of day-to-day operational control and strategic decision-making.

Looking back, what made the project successful?

Without a doubt, what has made T2S a success is its governance structure, which involves an incredible team of people across institutions. The T2S governance structure has fostered collaboration across the board and made sharing responsibilities easier. Also instrumental to the project's success has been the role of T2S as a catalyst for harmonising the post-trade market in the EU and beyond. A third crucial element is the significant collateral and liquidity savings that T2S has generated for participants.

T2S came about as a result of strong cooperation. The Eurosystem and market participants identified activities, developed requirements and monitored progress towards the commonly agreed goal. Even though migrating to the new platform required restructuring, all participants decided to invest in the project because of both the significant collateral and liquidity savings T2S would offer, as well as the recognition that T2S would pave the way for new business opportunities in the future post-trading landscape.

The T2S governance structure was designed as a hybrid of central bank governance and a corporate board of directors. The Governing Council of the ECB is ultimately responsible for T2S but the platform's daily management is handled by the Market Infrastructure Board. The CSD Steering Group articulates the views of the participating CSDs and, as previously mentioned, the platform's operational activities have been assigned to the 4CB.

During the initial stages of the project, market stakeholders participated in the T2S Advisory Group to ensure that the platform was being developed and implemented according to market needs. The Advisory Group on Market Infrastructures for Securities and Collateral (AMI-SeCo) took over the responsibilities of the T2S Advisory Group in 2017 and now supports the Eurosystem on issues related to the settlement of securities and to collateral management by facilitating an active dialogue between T2S market participants. The ECB chairs the AMI-SeCo and produces regular reports on the progress of the T2S harmonisation process.

T2S has been instrumental in moving discussions on post-trade harmonisation from a purely theoretical dimension towards a tangible action plan. We were faced with a wide variety of different practices across European markets and ultimately worked through them by collaborating with stakeholders who recognised the added value of harmonisation for their business models. We integrated ancillary processes and legal frameworks to dismantle the Giovannini barriers that hindered efficient cross-border activities. There is still work to be done in handling corporate actions but, based on our successful track record, I am fully confident that we will also be able to deliver in this area.

T2S has provided banks and intermediaries with a single pool of collateral for the entirety of their European business, thereby optimising settlement and triparty procedures. Additionally, T2S's auto-collateralisation mechanism has reduced the need to pre-fund cash accounts, both for daytime settlement and, in particular, for night-time settlement. It is important to point out that the use of auto-collateralisation

does not incur fees for market participants because the Eurosystem views the feature as an essential component of T2S.

Does the Eurosystem plan to capitalise on the T2S infrastructure and functionality in order to further the creation of a true domestic market in Europe?

T2S is a revolutionary project involving a large network of stakeholders. Thanks to T2S, issuers of securities have experienced major improvements in their collateral and liquidity management, have been granted easier access to foreign investors and have benefited from greater transparency in new issuance pricing. Moreover, thanks to T2S, CSDs are now operating on a level playing field with increased business opportunities, and investors have access to the full European securities market via a single entry point.

While the ECB has achieved great advances on the securities market, its mandate is much broader. We are here to serve Europe – every facet of its financial market and every one of its citizens. Our holistic approach is further underpinned by the upcoming technical and functional convergence of TARGET2 and T2S, which will further optimise liquidity management and give rise to new cost efficiencies. The consolidation project will introduce a central liquidity management system that will allow participants to monitor and manage their liquidity using a main cash account for all TARGET Services. In addition, we plan to further foster integration on the collateral management front by launching the Eurosystem Collateral Management System (ECMS) in 2022. The ECMS will merge 19 national collateral management systems and embed collateral management operations into the liquidity management lifecycle.

Coming back to the T2S platform, I am proud to state that we have overcome political and global market tensions to successfully deliver on time and with the desired scope and quality. Today, with 22 CSDs, 20 markets and two currencies linked to the platform, T2S is one of the largest market infrastructure systems in the world and has greatly contributed to the harmonisation of post-trade processes in Europe. The team behind our safe and efficient TARGET Services is now turning its attention to the field of securities issuance and distribution, which remains largely fragmented. Based on the milestones achieved so far, I am confident that the ECB can successfully collaborate with the market to produce positive and lasting change on that front as well.

2 A year of operational efficiency

Graphical exposé by:



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Timeline

T2S became fully operational on 18 September 2017 following the final migration wave of Estonia, Latvia, Lithuania, Poland and Spain to the platform. The newly-formed Slovakian central securities depository (CSD) NCDPCP also joined T2S on 30 October 2017.

A milestone was achieved on 29 October 2018 when, for the first time, T2S offered delivery-versus-payment (DvP) settlement in a currency other than euro. Danmarks Nationalbank successfully connected its real-time gross settlement and collateral management system Kronos2 to T2S, thereby allowing for the settlement of securities transactions in Danish kroner. On the same date, VP Securities – a Danish CSD that had already been using T2S for settlement in euro – migrated its Danish krone settlement to the platform. The Central Bank of Ireland and the new French CSD ID2S also connected to the platform.

Meanwhile, the Luxembourgian CSD VP LUX has moved its T2S issuing business operations to VP Securities. The transfer was successfully carried out on 9 November 2018 and further post-closure activities are currently ongoing.

Statistical analysis

T2S settles record-high volumes of securities transactions on a daily basis, reflecting high levels of harmonisation in the area of post-trade processes. There are multiple ways that T2S facilitates cross-border access to securities. Investors can access markets linked to T2S by becoming direct participants or through an intermediary. These intermediaries can be CSDs acting as investor CSDs, as well as multiple issuer CSDs. The T2S integrated and standardised settlement infrastructure benefits both of these operating models. However, while investor CSDs' activities can be measured to a great extent through cross-CSD settlement statistics, data for the cross-border settlement activity through the participation of multiple CSDs are not readily available in T2S, as the latter mostly results in domestic transactions. Therefore, cross-CSD settlement figures must be taken with caution because they only provide a partial indication of the cross-border settlement integration that T2S fosters.

So far, the T2S community has largely focused on migrating existing business to T2S and complying with the T2S harmonisation standards and European regulatory initiatives in the post-trade area. Strategic initiatives, such as developing the usage of CSD links or refactoring the operating model to centralise activities for CSD participants, have been progressing more slowly as a result.

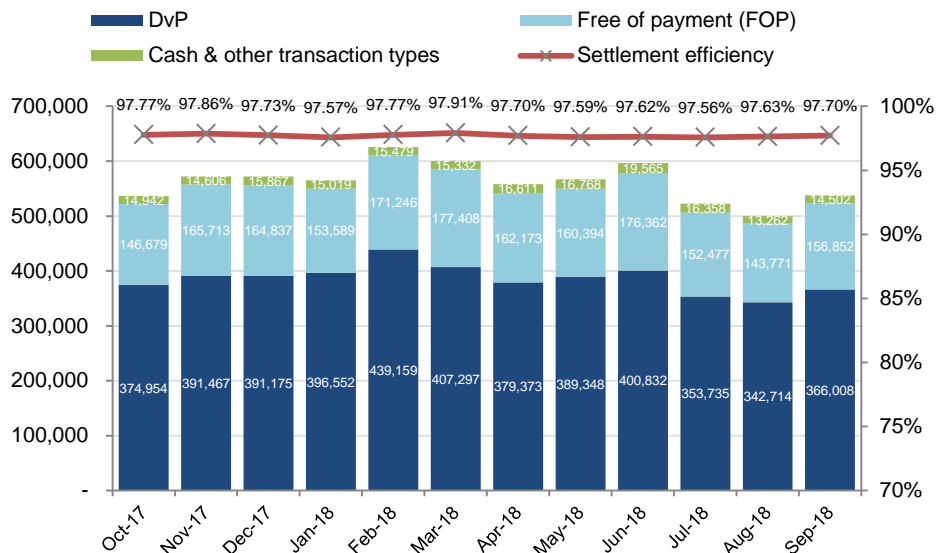
From October 2017 to September 2018, the daily average volume of transactions processed by T2S ranged between 499,747 (in August 2018) and 625,884 (in February 2018), with seasonal effects being observed in July and August 2018. DvP transactions represented 69% of the daily average volume. Settlement efficiency in volume terms was very stable throughout the 12-month period, standing at 97.70% on average.

The following chart shows the daily average volume of T2S traffic broken down by transaction type and the level of settlement efficiency in volume terms for the period in question.

Chart 1

Daily average volume per transaction type

(left-hand scale: number of transactions; right-hand scale: settlement efficiency)



Note: settled and partially settled transactions.

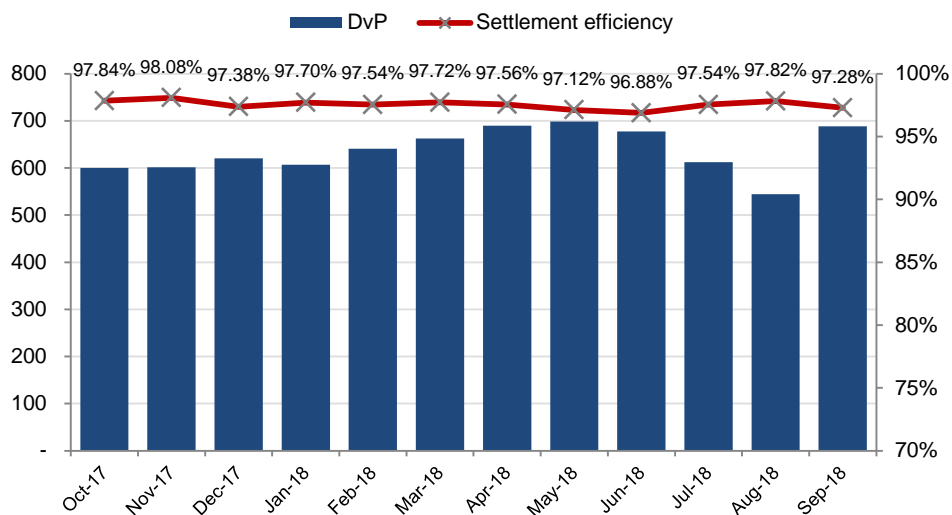
During T2S' first 12 months of full operation, the daily average value of DvP transactions has ranged between €544.2 billion (in August 2018) and €698.5 billion (in May 2018). Seasonal effects were also observed in July and August 2018, as was the case for the daily average volume figures. The level of settlement efficiency in value terms remained stable at 97.54% on average, in line with the settlement efficiency figure calculated in volume terms.

The chart below illustrates the daily average value of DvP transactions and the level of settlement efficiency in value terms for the period in question.

Chart 2

Daily average value of DvP transactions

(left-hand scale: value in EUR billions; right-hand scale: settlement efficiency)



Note: settled and partially settled transactions.

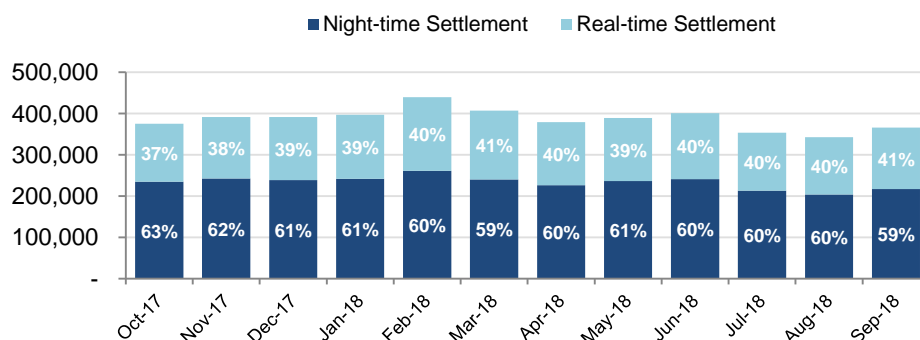
During T2S' first year of full operation, 61% of the daily average volume was settled in the night time, while 70% of the daily average value was settled in real time. The figures suggest that the night-time phase was more volume-intensive than the real-time phase, and that instructions settled in the real-time phase were of a higher average value than those settled in the night-time phase.

In the two charts below, the daily average volume and value of DvP transactions is broken down by night-time and real-time settlement for the period in question.

Chart 3

Breakdown of daily average volume of DvP transactions into night-time and real-time settlement

(left-hand scale: number of DvP transactions)

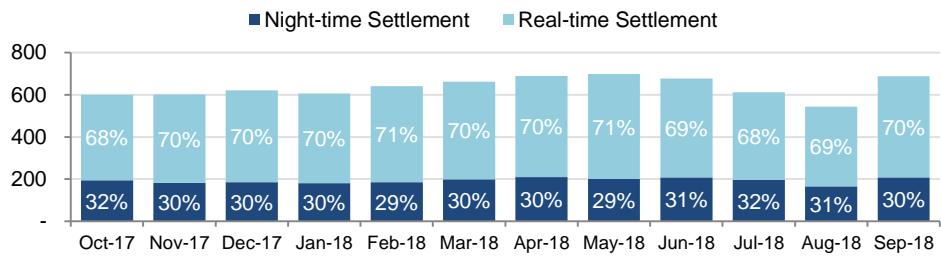


Note: settled and partially settled transactions.

Chart 4

Breakdown of daily average value of DvP transactions into night-time and real-time settlement

(left-hand scale: value in EUR billion)



Note: settled and partially settled transactions.

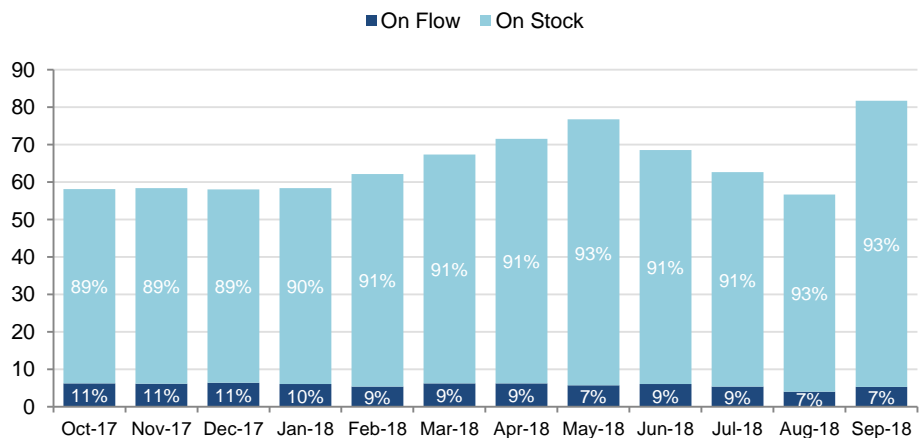
From October 2017 to September 2018, the daily average value of auto-collateralisation ranged between €56.69 billion (in August 2018) and €81.78 billion (in September 2018). On average, auto-collateralisation on-stock accounted for 91% of the value, corresponding to €59.26 billion, and auto-collateralisation on-flow accounted for 9% of the value, corresponding to €5.78 billion. It can be deduced from these figures that T2S participants rely largely on auto-collateralisation on-stock to settle their DvP instructions.

The following chart displays the daily average value of auto-collateralisation, broken down by type (on-stock and on-flow) for the period in question.

Chart 5

Daily average auto-collateralisation on-stock/on-flow

(left-hand scale: value in EUR billion)

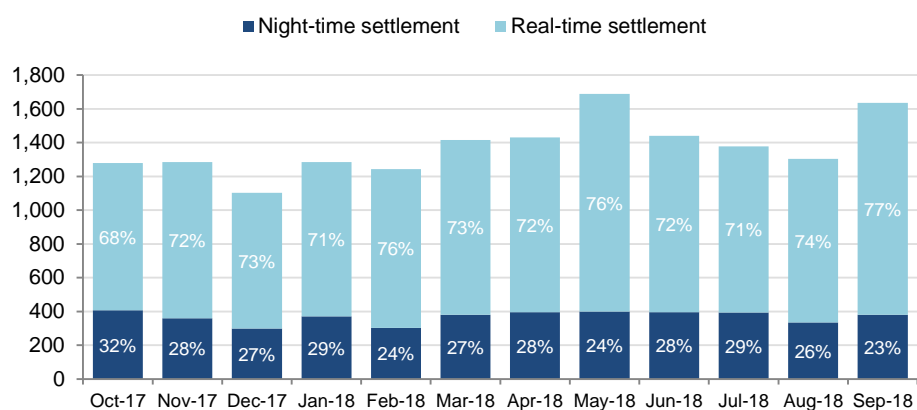


During T2S' first 12 months of full operation, the monthly value of auto-collateralisation usage has ranged between €1,102.44 billion (in December 2017) and €1,688.28 billion (in May 2018). On average, 73% of auto-collateralisation was used during real-time settlement, corresponding to €1,005.60 billion, and 27% was used during night-time settlement, corresponding to €368.28 billion. The usage of auto-collateralisation followed a similar pattern to that observed for the daily average value of settled DvP transactions, with the majority of DvP transactions being settled during real-time settlement. The monthly value of auto-collateralisation is illustrated in the following chart, broken down by night-time and real-time settlement for the period in question.

Chart 6

Total auto-collateralisation according to night-time and real-time settlement

(left-hand scale: value in EUR billion)



There are still barriers that hamper cross-border settlement integration. Overcoming these barriers lies mostly outside T2S stakeholders' competency. These obstacles include the remaining gaps regarding compliance with corporate action (non-T2S) market standards and the lack of harmonisation regarding withholding tax relief procedures.

Release deployment

During T2S' first year of full operation, one major release was deployed to production on 9 June 2018. This R2.0 release was made in order to deploy the relevant software fixes for the production problems identified. The release included 18 change requests, and addressed 66 problems and 24 release defects. The most crucial change request involved enhancing T2S' operational resilience within a multi-currency context. This change request was essential for the DKK migration as it allowed the T2S business day to be adapted to the Kronos2 business day's particular characteristics.

In addition, there were two problematic ticket releases: R2.1 and R2.2. The former included fixes for 21 problems and one defect, and was deployed to T2S production on 15 September 2018. The latter addressed six problems and was deployed to T2S production on 17 November 2018.

3 A single securities market for the European Union



Jesús Benito
Chief Executive Officer, Iberclear
Chair of the T2S CSDs Steering Group



Eric de Gay de Nexon
Head of Strategy, Market Infrastructures and Regulation,
Société Générale Securities Services

In your opinion, why did the European central securities depositories (CSDs) choose to join T2S? What were the initial expectations and what was the real outcome?

Benito: I am not going to deny that at the very outset of the T2S Project (July 2006) CSDs were reluctant. This was mostly because a function that was entirely within the remit of private companies, such as CSDs (many belonging to listed companies), was now going to be carried out by the public sector. In addition, there was a concern that T2S represented a first step towards the European Central Bank (ECB) creating a CSD of its own. I also highlighted the risk of cross-border settlement cost decreasing at the expense of domestic settlement cost.

In the end, we joined T2S because of a mixture of responsibility for improving the situation in cross-border settlement in Europe, pressure from our public authorities and the promise that T2S (i.e. the ECB) was not going to move further towards creating a CSD (see Principle 3 of T2S in the Framework Agreement).

Our expectations? We hope that the ECB gives the market time to consolidate the changes T2S will bring and to maximise its benefits (e.g. not creating a new CSD).

de Gay de Nexon: I should first say that the post-trade area in Europe remains, even today – after 17 years of hard work by the main stakeholders – extremely fragmented. When the idea of T2S was launched in July 2006, it was seen by the industry – meaning not just the CSDs but also their participants – as the main and most realistic opportunity to really foster harmonisation and standardisation in the post-trade area, and consequently the consolidation of European financial markets.

This was in essence the primary, overarching purpose of the initiative. That said, we could also mention induced expectations of both CSDs and their participants, such as easy access to a broader catchment area, an opportunity to expand service offering, rationalisation of platforms and operations, economy of scale and cost reduction, better efficiency and security, improved liquidity management across markets, and the role of T2S as a catalyst for harmonisation beyond settlement.

The actual outcome remains, at present, mixed. The settlement process on T2S has been harmonised for 23 CSDs, while numerous other harmonisation initiatives are on track. Nevertheless, the most difficult parts need time so that expectations can be delivered, and local peculiarities still exist. Real cross-CSD settlements remain marginal, volumes are below initial assumptions and total costs have not decreased as anticipated. As for the expansion of service offering, that is still seen as evolving.

However, we must remain confident in the potential of T2S and give time to all constituents of the post-trade industry to build around the platform, so as to reap all the benefits it will eventually deliver. The best is yet to come!

What are the most important practical benefits that T2S has brought about so far?

Benito: In my opinion, harmonisation. T2S has been a catalyst to foster the harmonisation of post-trading in Europe. The Spanish market has made an impressive effort to achieve full harmonisation complying with T2S and Corporate Actions Sub-group standards. We expect other major markets to follow suit.

de Gay de Nexon: T2S has attracted the main CSDs and most European settlement volumes onto a single platform; it also gives a significant and constant impulse to harmonisation and standardisation work. T2S has become a forum for sharing items and defending concerns (the CSD Regulation, for example) in the post-trade area. As such, it has brought stakeholders closer and encouraged close cooperation with the Eurosystem and its constituencies. I think the governance that the ECB has put in place to manage its market infrastructure projects is highly efficient and is one of the main benefits that T2S has brought to the European post-trade community.

How does T2S facilitate cross-border access to securities?

Benito: By means of an integrated technical platform that manages both the cash accounts and the securities accounts of all T2S CSDs. As a result, the movement of securities and collateral has dramatically improved in terms of efficiency, simplicity and speed. Before T2S, a delivery-versus-payment link between two CSDs was costly and difficult to achieve because a technical interlinkage between three different IT

platforms was always necessary: the two securities settlement systems of the CSDs and the central bank component of TARGET2.

de Gay de Nexon: As one settlement platform offering harmonised settlement to 23 CSDs, T2S provides directly connected parties with a single point of access to the main European CSDs, thereby fostering cross-border investment. The one-stop shop offer for investors, based on an investor CSD being the single point of access to European CSDs, has yet to prove itself.

What are the benefits of being a directly connected party in T2S and what can be done to foster further integration beyond the post-trade field?

Benito: It is not my role to differentiate between the two different ways of being connected to T2S.

As far as fostering further integration is concerned, we believe that it is necessary to give T2S stakeholders time to adapt to the new landscape, rather than rushing into new ambitious and costly projects. It was only in September 2017 when the last migration wave happened. Structural changes require time to become reality.

We believe that the ECB should not encroach on the responsibilities of the private sector by creating additional infrastructures (even if they are stand-alone infrastructures or limited-purpose CSDs) or by competing with the private sector in a field that some of us believe falls outside its remit. As we belong to listed companies, we are obliged to defend the legitimate interests of our shareholders. Nationalisations are costly and very difficult to justify nowadays in Europe.

Quite on the contrary, the public sector should tackle the real problems that still remain in this field, including the differences in supervision of securities issuance, the differences in tax regimes and procedures in Europe and the differences in securities legislation between the Member States.

de Gay de Nexon: The benefits of being a directly connected party are having immediate access to the settlement platform and a single direct access to the main European CSDs, as well as pooling intraday liquidity needs. To foster further integration of European financial markets, we need to work on greater harmonisation and standardisation, and to support the implementation of the recommendations made by the European Post Trade Forum in its recent report.



Joël Mèrère
Chair of the T2S Harmonisation Steering Group



Patrick Pearson
Head of the Financial Markets Infrastructure Unit, European Commission

What are the greatest achievements of the T2S harmonisation agenda?

Mèrère: The T2S harmonisation agenda was key to creating an integrated market and overcoming the Giovannini barriers, in particular. Overall, today there is almost full compliance, and hence harmonisation, across the T2S markets with the so-called “core T2S standards” (the standards required for the system to function efficiently). Significant progress has also been made in other activities related to the broader context of post-trade services. The launch of T2S and the harmonisation agenda directly dismantled, or helped to dismantle, at least ten of the original 15 Giovannini barriers, which were identified in 2003.

T2S provides services which were previously unavailable: real-time access to central bank liquidity for settling securities transactions during the day; harmonised night-time settlement, making use of technical netting; harmonised and state-of-the art auto-collateralisation processes; and the ability to consolidate securities-related liquidity on a single dedicated cash account held at a central bank.

Pearson: Harmonisation through T2S helps us achieve the fundamental benefits of a single market. First, it is now easier for investors to buy securities in other European Union (EU) Member States. Second, settlement processes have become more efficient as national barriers have been removed, creating cost savings opportunities and reducing settlement fails. Third, competition between post-trade service providers has increased, as have the number of choices available for investors, securities issuers and participants of central securities depositories. Beyond these general benefits, T2S has additional, specific advantages. It enables market participants to pool liquidity and collateral at EU level rather than having to ensure local availability of

cash and collateral, another clear contribution to the capital markets union. Finally, T2S contributes to financial stability by making it possible to settle in central bank money. The complementarity between operational harmonisation in T2S and regulatory harmonisation through the Central Securities Depositories Regulation (CSDR) has been instrumental to achieve these goals.

How has T2S furthered the harmonisation agenda at the system-wide and operational levels? What elements are still missing?

Mère: As already observed in other circumstances, having a concrete project on the table incentivises harmonisation, and, in turn, harmonisation contributes to the success of the project. This is the virtuous circle triggered by T2S.

There are indeed still some standards that have not been completely implemented. Corporate actions are probably the main area where progress still needs to be made (because it is probably the most complex to tackle). However, it is important to point out that a lot has already been achieved and to highlight that the harmonisation process is not a “once and for all” type of approach; new areas for harmonisation continue to be addressed. For example, work is under way for collateral management, with significant progress already made towards defining standards for handling corporate actions for collateral and tri-party collateral management processes. The European Commission has recently announced major initiatives aimed at addressing conflict of laws and withholding tax processing.

Pearson: The creation of a common platform for payments (TARGET) and the launch of TARGET2 in 2007 marked the start of an impressive journey. T2S then widened the scope from cash to securities. Since its launch in 2015, central securities depositories (CSDs) in 20 European markets have migrated to T2S. The key role that T2S plays at both the operational and system-wide levels can be seen through the daily volumes and values of settlement transactions on the platform, and the improvements it has made to increase settlement efficiency. Looking ahead, T2S will remain crucial in implementing the EU regulatory framework, for example the development of a joint penalty mechanism under the EU-wide settlement discipline regime introduced by the CSDR. A key project for the future will be developing the Eurosystem Collateral Management System, thereby crossing another harmonisation gap on the road towards a capital markets union. We are looking forward to working closely with T2S stakeholders to help achieve that important milestone.

How is the T2S harmonisation agenda linked to the European Union plan for a capital markets union (CMU)?

Mère: T2S is undoubtedly a tool that can only facilitate the CMU’s overall objective of pan-European financing and investment. There is also, however, an obvious complementarity between the T2S harmonisation agenda and the CMU project. When the European Commission launched the CMU project, it included a post-trade dimension: the European Post Trade Forum, whose objective was to identify the Giovannini barriers that had not yet been eliminated, as well as new barriers potentially hampering the project’s implementation. The Forum’s analysis has been conducted in a fully complementary way: it focused on identifying the barriers that the

T2S agenda could not overcome (legal/tax/regulatory issues) and the barriers that the T2S agenda had already tackled and for which overlaps had to be avoided, such as the operational dimension of collateral management harmonisation. We can therefore go even further than simply looking at the “link” between the T2S agenda and the CMU project: from a post-trade perspective, it may be a unique opportunity for the CMU project and its post-trade dimension to be supported by the successful implementation of a mechanism aimed at facilitating securities holding and settlement at cross-border level.

Pearson: The link is indeed very strong. In fact, one might say that T2S is not only linked to the concept of a capital markets union but is one of its many crucial prerequisites. At the EU level, securities transactions worth trillions of euro take place every day. In the past, the settlement processes for these transactions were fragmented along national borders – each country had its own set of procedures and requirements – and this made cross-border settlement difficult and cumbersome. It is hard to imagine how a capital markets union could function without a single market for securities settlement. The T2S platform and its “regulatory partner”, the CSDR, are the cornerstones of the single market for securities settlement and have spurred significant progress towards that goal.



*Dominique Le Masson
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Securities Services/BNP Paribas Group*

How has T2S promoted collateral mobility and liquidity management so far?

T2S promises on liquidity management and collateral optimisation have clearly been fulfilled.

With T2S, a participant now has the possibility to centralise all T2S cash flows in one Dedicated Cash Account (DCA), in order to benefit from the netting effect across CSDs and T2S markets. This represents a significant change from a fragmented world, where a participant, being a member of several CSDs, had to use several cash accounts in different central banks to manage multiple liquidity pockets and collateral pools.

For instance, BNP Paribas Securities Services previously had to maintain four euro cash accounts with the central banks of the main euro markets to fund its clients’ settlement activity. With T2S, more than 90% of the cash settlement activity uses a single DCA. The resulting netting effect, along with the T2S auto-collateralisation

facility, has significantly reduced the amount of additional cash or collateral we need to bring to the system.

Another T2S feature seen as beneficial is the common rules on night-time settlement. This unified process consumes less liquidity than under previous market arrangements, where such night batches were not available through all CSDs.

Again, a uniformed capacity to leverage national central bank (NCB) auto-collateralisation and client auto-collateralisation is one of the greatest achievements of T2S, as far as liquidity management is concerned.

Has the auto-collateralisation functionality in T2S granted banks easier access to liquidity?

The T2S auto-collateralisation functionality has significantly reduced the amount of additional cash or collateral we need to bring to the system. So the answer is yes!

Whether participants choose to centralise their pool of collateral in one place or to keep it in multiple markets, T2S will still use it to get intraday financing and settle trades:

- participants can have one single pool of collateral and use it to finance multiple markets: a single DCA can be linked to securities accounts held with different CSDs. T2S can automatically detect the available collateral in one of the securities accounts linked to the DCA and use it for intraday financing in any one of the CSDs. T2S will trigger the NCB auto-collateralisation functionality with the collateral held with another CSD, as long as the securities held as collateral are eligible with the NCB that provides the financing.
- participants can have a fragmented collateral pool: T2S will check where collateral is available and use it automatically to obtain intraday financing.

In which ways do you believe that the auto-collateralisation functionality could be further improved?

T2S already provides great functionalities: a participant can combine client auto-collateralisation with NCB auto-collateralisation. But more flexibility is needed, as a unique DCA with individual limits per client bidding. The best solution would be to be able to count on our clients' assets for collateralisation but avoid being obliged to use the client auto-collateralisation step (the Credit Memorandum Balance).

How could T2S be upgraded to enhance the integration of the post-trade market in Europe?

The true test is whether T2S can deliver the three key benefits set out by the European Central Bank: (i) deeper market integration, (ii) cost reduction, and (iii) improved bank collateral and liquidity management.

The platform is proving reliable and scalable, plus it is feature-rich, but there are still legal, fiscal and other barriers preventing participants from fully leveraging T2S

benefits. There is a clear need for harmonisation of the existing ecosystem and for market integration. These will bring cost reductions that have yet to be fully achieved for domestic and cross-border transactions.

T2S has helped simplify one layer. However, it has not removed those layers or parties and their associated costs from the post-trade transaction chain.

There are three possible solutions:

- T2S should accelerate its plans to bring European debt into T2S by creating a centralised European infrastructure – such as a European CSD – that will settle such instruments. This is a key step in fostering harmonisation.
- more triparty collateral management should be settled in T2S, as participants can already use the T2S balance sheet netting functionality.
- corporate actions standards should be fully implemented.

T2S is definitely the best tool for European post-trade market integration. Let's use it!

4 Broadening our horizons: T2S goes multi-currency



Karsten Biltoft
Head of Financial Stability, Danmarks Nationalbank

Why did the Danmarks Nationalbank decide to link its Kronos2 real time gross settlement system to T2S and begin settling securities in Danish krone?

As a central bank, Danmarks Nationalbank promotes efficiency and safety in payment and securities settlement systems. We have therefore been following the Giovannini process, which highlights the barriers to efficient cross-border settlement of securities in Europe. When the European Commission and the European Central Bank (ECB) published their joint press release stating that they were evaluating opportunities to provide settlement services for securities transactions, we immediately saw the potential of T2S to dismantle many of the barriers and contribute to an efficient settlement of securities, from a cross-border perspective, in Europe. Thus, Danmarks Nationalbank had expressed a positive view of T2S even before it became a multi-currency platform. Besides this general view, the Danish market found it important to migrate to T2S in order to ensure an efficient channel for the distribution of Danish bonds to the European market, since our market for mortgage bonds is among the biggest in the world. The market value of bonds issued through VP Securities was equivalent to €504 billion at the end of 2017.

After the technical migration of the Danish kroner to T2S, the Danish market must explore the business opportunities that open up, such as the possibility of simplifying the infrastructure by letting VP move up the value chain through the creation of links to other T2S markets, and other ways of exploiting the new opportunities. The T2S harmonisation agenda, successfully managed by the ECB and the European Commission, provides a good background for harvesting such potentials in T2S.

We are proud to be the first non-euro currency on T2S and we hope that the successful migration of the Danish kroner to the platform will pave the way for other currencies, as this will enhance the efficiency of T2S even further.



Niels Olsen
Chief Executive Officer, VP Securities

VP Securities was already using T2S for settlements in euro before migrating its Danish krone settlement services to the platform as well. What has been the impact of the migration for the daily business processes in VP Securities so far?

The Danish krone's migration to T2S is probably the biggest project in VP Securities' recent history and a remarkable achievement for the whole of Denmark's financial community. Denmark took the decision to join T2S many years ago, and we now find ourselves at the end of a large IT project and at the start of a new business journey.

Our migration to T2S for euro-denominated transactions in 2016 was fairly smooth, but also fairly limited from a volume perspective. Customers were very quick to make the necessary adjustments. However, when it came to the Danish krone, which went live on 29 October 2018, the situation was a bit different. Extensive testing began in April 2018, which helped to ensure that all participants were ready prior to the go-live date. New communication formats, a layered model and new procedures all contributed to an increase in complexity. Indeed, that complexity resulted in somewhat lower levels of settlement efficiency in the first few weeks.

However, thanks to strong cooperation across the entire ecosystem of participants involved in clearing and settlement in Danish kroner, we were able to make it to the finish line on time.

Hundreds of meetings were held with customers and working groups in order to be sure of getting things right. The stamina and commitment of the Danish financial industry and its extensive dialogue with counterparts in the T2S team and across the ECB helped to overcome problems that are inevitably associated with a project of this size.

From a business perspective, having the Danish krone on the T2S platform represents a real breakthrough. The project is now changing from a predominantly IT and market-oriented project to a business project. Being able to connect the Danish market to T2S is one thing, but VP's links with the various Nordic countries are such that all Nordic economies are now connected to the European market in a standardised and harmonised manner.

5 Factoring in the future: auto-collateralisation and optimised liquidity management



*Mehdi Manaa
Deputy Director General, Market Infrastructure and
Payments, European Central Bank*

How will T2S participants benefit from the consolidation of TARGET2 and T2S?

First, the convergence of TARGET2 and T2S will reduce operating costs for TARGET Services by introducing uniform technical solutions. Earlier this year, the European Central Bank (ECB) announced that the T2S pricing structure would be realigned and fees for participants would be increased to ensure that the cost-recovery principle of the service remained intact. The main drivers behind this decision were the lower volumes settled via T2S by the central securities depositories (CSDs), largely due to the financial crisis, as well as the additional costs incurred by delays in the migration of certain markets to the platform. By decreasing the operational cost of TARGET Services, the consolidation project will help maintain the balance between the settled volumes and costs for TARGET2 and T2S.

Second, the consolidation of TARGET2 and T2S will bring about a new real-time gross settlement system adhering to the latest ISO 20022 messaging standards. The central liquidity management mechanism will provide all participants with a detailed overview of, and full insight into, their central bank accounts by making use of a main cash account and a dashboard for viewing all liquidity positions. Any liquidity held in dedicated cash accounts will be considered for minimum reserve purposes without the need to transfer the balances back to the main cash account. This same approach could apply to T2S accounts for minimum reserve purposes, provided that the T2S community agrees to implement such a change. If that were to happen, the consolidation of TARGET2 and T2S would significantly optimise liquidity management for participants.

Third, we plan to use the consolidation of TARGET2 and T2S as an opportunity to enhance the cyber-resilience of both infrastructures. The ECB has developed a cyber strategy to anticipate, withstand, contain and rapidly recover from cyberattacks, and

as T2S is subject to this cyber risk management it stands to greatly benefit from this strategy.

Which course of action can the ECB take to further develop T2S?

T2S has already revolutionised securities settlement in Europe by putting an end to complex cross-border settlement procedures. Today the platform is one of the largest market infrastructures in the world, connected to 22 CSDs, giving access to 20 markets and offering securities settlement in two currencies across Europe.

Nevertheless, there is still much to be achieved on the way to a fully integrated European capital market. For instance, while T2S has contributed to the integration of post-trade processes across Europe, the issuance and distribution of securities still hinges upon fragmented legacy standards, structural constraints and complex market practices at the national level. Furthermore, facilitating interactions and procedures between relevant participants still entails high costs and risks. European issuers need to be able to collect funds from investors across the continent in a fair and well-defined manner. The T2S community is well-positioned to propose possible solutions, which the ECB will certainly take into serious consideration.