



EuroCCP

***ESF's Blueprint for a
Single Pan-European Central Counterparty***

6 December 2000



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Dear Recipient,

The European Securities Forum (ESF), in its continuing work on improving the efficiency of the fragmented and costly post-trade processing across Europe, has prepared the enclosed *Blueprint for a Single Pan-European Central Counterparty* (the "*Blueprint*"). Our aim is to have the single pan-European central counterparty (EuroCCP) in place during 2001. This document describes (a) why one EuroCCP is better than many; (b) industry participants' requirements and a proposed model; (c) what the benefits of an EuroCCP to industry participants are.

The *Blueprint* is distributed to all interested parties – securities industry associations, trading spaces (stock exchanges, electronic communication networks, automated trading systems), national and international clearinghouses and central counterparty organizations, central banks and regulators. Any organization we may have unintentionally omitted can request a copy of the *Blueprint* from the EuroCCP Project Office. Recipients are invited to send their comments by 31st January, 2001 to the ESF at the addresses on the next page.

The *Blueprint* is the work of the CCP-Action Group of the ESF. Due to the widely-expected increase in trading in European securities, especially in equities, it is felt that the combination of existing inefficiencies and a rapid rise in volumes could cause a serious capital market disruption if a EuroCCP does not exist as soon as possible. The EuroCCP initiative is fully in line with the European Union's objective of a single pan-European capital market by 2005 (*The Financial Services Action Plan*) or sooner (the *Lamfalussy Report*). Early progress on the EuroCCP is vital if these targets are to have a prospect of being met.


The *Blueprint* is intended to shape discussion among interested parties and is not a pre-determined model for functions such as risk management, netting and routing. Details describing these functions are included to illustrate the strategy and vision of a EuroCCP. Likewise, the priority on equities is due to the fact that this segment represents the most immediate need for improvements but it is intended that the EuroCCP will eventually embrace all traded financial instruments. A solution which includes additional instruments from the outset would be welcomed if it is readily available.

Some important subjects are not included in the *Blueprint*. We recognize the importance of arrangements with trading spaces to route transactions to the EuroCCP, and arrangements with central depositories and clearing agents to route settlement details. The *Blueprint* will facilitate discussions with the entities on these important issues, and it is also hoped that it will stimulate market participants to raise any other issues and considerations which will help refine the model.

The ESF is committed to press forward quickly for concrete progress. Members of the ESF will invite central counterparty organizations (CCPs) in Europe to respond to the *Blueprint* and propose workable solutions to the ESF either independently or, preferably, in partnership. As part of the discussions, the ESF will appoint technical consultants to help assess the quality and the scalability of the IT capacities and capabilities of service providers making proposals for EuroCCP. This reflects concern that the volume of securities transactions could grow faster than the systems currently available.

If rapid progress with these service providers cannot be achieved, a formal request for proposal will be issued to a broader group of organizations.

Yours sincerely,



Pen Kent
Executive Chairman
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Part A
Why One EuroCCP

Traditional Views of Clearance and Settlement Reform

“[We] became increasingly concerned about the progress of the industry toward an efficient and cost effective ... clearance and settlement system. We felt that little or no progress was being made nor would be made in the near future since the interest of the processors seemed to be dominating the interest of the users. We felt that the expense involved in the continuing stagnation in the effort toward a viable clearance system was much too great to be allowed to continue... We found in our Forum that most participants favored the creation of a ... entity through merger, but that they viewed the prospects for such concerted action by the processors with a strong sense of pessimism”

While this text could easily have been written by almost any group of European securities firms in 2000, it was in fact written by the Securities Operations Division of the Securities Industry Association of the United States in 1976.¹

The U.S. system in 1976 was characterized by seven CCPs each operating in vertical silos.² In most cases the CCPs accounted for a significant component of the revenue of their affiliated exchange^{3,4} and it comes as so surprise that both the exchanges and the CCPs opposed any integration unless theirs was the single remaining institution.

The merger debate among European trading spaces has often exposed the weak point of the system to be the lack of integrated clearance and settlement.⁵ The U.S. in 1975 recognized as it moved toward an integrated national market system that the early achievement of an efficient and economical national market system was dependent in large measure, on prior or at least contemporaneous establishment of a national clearance and settlement system.⁶

Opposition from the infrastructure, or processors, to reforming the system in the U.S. has been historical. Despite clear and compelling evidence of reduced clearing fees, lower and optimized clearing fund contributions,^{7,8} lower costs of operating one CCP versus many, improved regulatory

¹ Official Transcript of Proceedings before the Securities and Exchange Commission in the Matter of National Securities Clearing Corporation., 17 June 1976, page 311 ff.

² Official Transcript of Proceedings before the Securities and Exchange Commission in the Matter of National Securities Clearing Corporation. 17 June 1976, pages 258 and 385.

³ The percentage of total exchange revenue generated by its CCP in the first quarter of 1976 was: AMEX – 11.49%; Boston S.E. – 41.32%; Midwest S.E. – 11.28%; NASD – 42.01%; NYSE – 15.81%; Pacific S.E. – 24.05%; Philadelphia S.E. – 52.66%. Source: SEC Staff (Branch of Securities Industry and Self-Regulatory Economics. Directorate of Economics and Policy Research) Report to the Commission, 19 October 1976.

⁴ CCP profit per side in the first quarter of 1976 (revenue over fully loaded cost) ranged from a high of \$0.44 per side at the Philadelphia CCP to a low of \$0.05 profit per side at NASD’s CCP. Source: SEC Staff (Branch of Securities Industry and Self-Regulatory Economics. Directorate of Economics and Policy Research) Report to the Commission, 19 October 1976.

⁵ Initial Report of The Committee of Wise Men on the Regulation of European Securities Markets, 9 November 2000, page 11.

⁶ In the United States Court of Appeals, docket number 77-1199, Bradford National Clearing Corp. against Securities and Exchange Commission, Brief of the Securities Industry Association as *Amicus Curiae* in Support of Respondent, 24 June 1977, page 6

⁷ Official Transcript of Proceedings before the Securities and Exchange Commission in the Matter of National Securities Clearing Corporation. 17 June 1976, pages 30, 214., and 1563-4.

⁸ “The more fundamental consideration in evaluating the advantages of a single clearing fund is the likelihood that with a single system, the consolidated fund would be reduced in comparison to the [multiple] funds that exist today. The increased netting factor inherent in a single system...results in a reduction in overall exposure to the clearing entity which should lead to a reduced clearing fund. The right of offset does not exist between clearing corporations in today’s environment and this is a critical problem in instances of insolvency.” NSCC “Document No. 22”, June 1976, Memorandum to the SEC.

reporting and surveillance,⁹ and savings to members, both large and small, which were characterized by the former Chairman of the SIA as of “major importance,”¹⁰ the infrastructure entities which would be absorbed into a single national system opposed the elimination of even one CCP.

The Facts of “Why One CCP is Cheaper Than Many”

In the European context, the absence of multiple CCPs renders it impossible to perform an economic analysis of what the savings might be of using one CCP for all of Europe as opposed to the establishment of multiple vertical silos.¹¹ However, it is possible to look at the analogous U.S. situation in the early 1970s. Clearly Europe can continue to develop multiple vertical silos. There has been no evidence to suggest that the outcome of such a development in Europe would be any different from the conditions that lead the U.S. to move to unify its vertically-siloed clearance systems¹². While the quantitative evidence clearly showed the need for such unification, we should not forget that over and above issues of cost it was this very vertical-siloed system which contributed so strongly to the paperwork crisis of the 1960s. “The inefficient nature of the present fragmented system of clearing has not only been costly but also subjected broker-dealers and their customers to the risk of substantial losses of funds and securities. Indeed, in the late 1960’s, the lack of a modern unified clearing system was largely responsible for a crisis in the securities industry which caused significant losses to members of the brokerage community and to the investing public.”¹³

In April of 1975 the U.S. Securities and Exchange Commission released a study¹⁴ it had commissioned on the costs of clearance and settlement in the U.S. and the implications for development of a unified national system.

The SEC study examined the operating costs of 63 firms selected by the SEC to represent a cross-section of the brokerage industry. The study concluded that the savings of a national system for

⁹ “With the consolidation and adding of additional centers, information as to each member’s activity in all marketplaces ... would immediately be accessible to the System which would then become an even more valuable regulatory tool.” Gordon S. Macklin, President, NASD Inc., Testimony before the U.S. SEC in the Matter of The Application for Registration of National Securities Clearing Corporation, 1976

¹⁰ Official Transcript of Proceedings before the Securities and Exchange Commission in the Matter of National Securities Clearing Corporation. 17 June 1976, page 349. Most participants estimated 10% to 20% savings on operational expense. See especially page 1908 as well as pages 16, 21, 28, 30, 40, 106, 212, 1877-1878, 1883, 1888, and 1925.

¹¹ An early decision to build and operate only one CCP in Europe would, at a minimum, seem to eliminate multiple, essentially redundant, development expenditures in various markets.

¹² At the time that this integration of equity CCPs was proposed, derivative financial instruments had not yet risen to prominence. As a result, the focus of reform was on the cash equity market alone. To see how the 1975 efforts might have been modified if derivatives had played a prominent role, we can examine the reports of the major investigative efforts on the 1987 market break. Subsequent to the 1987 market break, the Brady Commission recommended the “unified clearing” of all financial instruments in the U.S. All the CCP infrastructure opposed this although in 2000 a private sector committee, the Shallcross Committee, has begun to resurrect the idea. Sort of unification, it was suggested by the President’s Working Group on Financial Markets post-1987 that at least the U.S. clearing houses should share risk information on common members. As reported in the U.S. Congress commissioned study “Study of International Clearance and Settlement,” 1989, on page 251: “It is safe to say that there is a good deal of resistance within the clearing and settlement industry to the concept of information sharing.” Inter-product CCP integration is discussed later in this paper.

¹³ United States Court of Appeals, No. 77-1199, On Petition for Review of an Order of the Securities and Exchange Commission. Answering Brief of the Securities and Exchange Commission, page 3.

¹⁴ “An Analysis of the Current Costs of Clearing and Settling Securities Transactions and Cost Implications of the Development of a Unified National System”, Study for U.S. SEC by R. Shriver Associates, dated 24 April 1975, SEC contract SE990. While all such studies have inherent limitations, this one stands out for the involvement of SEC personnel in the process and the public endorsement of the study’s process and the practicality of its findings. Page 11 of letter from SEC Chairman Roderick M. Hills to the Hon. John E. Moss, Chairman of the Subcommittee on Oversight and Investigations, Committee on Interstate and Foreign Commerce, House of Representatives, 3 November 1976.

just these 63 firms alone would amount to \$150 million USD in '75. In year 2000 terms this would equal \$475 million in savings.¹⁵

The SEC's study examined the books of the then seven CCPs and reported their monthly operating costs as follows:¹⁶

CCP #1	CCP #2	CCP #3	CCP #4	CCP #5	CCP #6	CCP #7	Total
\$123K	\$145K	\$624K	\$254K	\$173K	\$592K	\$187K	\$2,094K

In examining these costs, the SEC study concluded, "Within each clearing entity, costs behave as if they are either independent of volume, or in some cases a dependency does exist but volume dependent costs are a fraction of total costs (substantially less than 5%)."¹⁷ This same conclusion was acknowledged by NSCC: "In addition, logic and the functions of the clearance and settlement business also demonstrate that scale economies exist. Clearing today is predominantly a data processing operation wherein a large degree of its costs are not sensitive to changes in activity levels."¹⁸ The President of NSCC went on to support the conclusions of the SEC study in this area.¹⁹ We will discuss more on economies of scale in clearance and settlement later in this paper.

As part of its due diligence on how to develop a national market system, the SEC examined three potential models, each model characterized by requiring members to make only one guarantee fund contribution:

- 1) keep all seven clearing houses and inter-link them
- 2) keep only a core number of clearing houses (three) and inter-link them
- 3) move to one clearing house only

Using data provided by the seven CCPs at the mandate of the SEC, the SEC study was able to compute the pure savings to members arising from the elimination of operating costs of redundant CCPs in each model:²⁰

<i>Model</i>	<i>% Reduction in Costs Relative to Status Quo</i>
Keep all seven clearing houses and inter-link them	9.6
Maintain and inter-link three clearing houses	32.7
Move to one clearing house only	63.5

Similarly, using data obtained from the CCPs and member firms, the study was able to project the cost of clearing per trade for each model:²¹

<i>Model</i>	<i>Costs relative to Status Quo of \$0.55</i>
Keep all seven clearing houses and inter-link them	\$0.50
Maintain and inter-link three clearing houses	\$0.37
Move to one clearing house only	\$0.20

¹⁵ \$1 of 1975 money equals \$3.17472119 when the 1975 dollar is multiplied by the Average 2000 CPI and then divided by the Average 1975 CPI. Alternatively using the average inflation multiplication method yields \$3.176156293. For this analysis we used \$3.17 as the equivalent value in year 2000 to \$1 in 1975.

¹⁶ Ibid, Pg. 47

¹⁷ Ibid, Pg. 57

¹⁸ Official Transcript of Proceedings before the Securities and Exchange Commission in the Matter of National Securities Clearing Corporation. 17 June 1976, Statement of Jack Nelson, President, National Securities Clearing Corporation, page 15

¹⁹ Ibid, page 19

²⁰ An Analysis of the Current Costs of Clearing and Settling Securities Transactions and Cost Implications of the Development of a Unified National System; Study for U.S. SEC by R. Shriver Associates; 24 April 1975; SEC contract SE990, pages 101 and 102.

²¹ Ibid, page 104

Any discussion of integrating CCPs invariably leads to the question of economies of scale. A study submitted to the U.S. SEC in August 1976, commonly known as “The Mendelson²² Study,” was the first attempt to conduct an economic study of the economies of scale in integrating CCPs. The study, based on time series, concluded: “There are highly plausible *a priori* grounds for expecting both short- and long-term economies to exist... [T]he statistical studies unmistakably indicate that short-run economies do indeed exist. The coefficients have the right signs and are statistically significant. These economies are suggested by both the long and short term series.... The preponderance here suggests that economies do exist. Indeed I am not aware of any evidence to the contrary.”

As markets begin to cross-list instruments the efficiency of one CCP over many continues to be true. A case in point was exchange-traded options in the U.S. in 1974 where new entrants listed different types of options often on the same underlying cash market instruments. While modern options were originated by CBOE, AMEX and an exchange called PBW Stock Exchange, Inc. quickly decided to enter the options business trading the same basic options as CBOE. Since two of the markets did not have an options CCP franchise to protect, the three markets elected to use CBOE’s existing CCP, CBOE Clearing Corporation, as the unified industry CCP. On 23 July 1974 Paul Kolton, Chairman of AMEX, wrote to the SEC that “First, a single options clearing corporation would be much less expensive to operate than interfacing separate clearing corporations. For AMEX and CBOE alone, separate entities would cost member firms about \$300,000 a year more than the single entity proposed. Further, for each additional exchange trading options, the incremental annual cost of developing separate, interfaced facilities over those of developing additional satellite operations for a single clearing facility are estimated to be an additional \$300,000.” In year 2000 terms that would be \$951,000 per year in additional cost to the members for each separate CCP. Paul Kolton went on to add a perspective that reflects on any linkage among CCP in support of cross-listings: “A single entity will also create less chance of error by eliminating the need for a massive daily exchange of data between separate clearing entities with separate book-keeping systems.”^{23,24}

The benefits of a single, unified CCP are not limited to securities in general, or equities in particular. The U.S. dialogue described above must be viewed in the context that in 1976 financial derivatives were still relatively new.²⁵ While options markets were establishing a unified CCP in 1974 and the equities industry was taking its first steps toward a unified CCP in 1976, financial futures began only slowly.²⁶ Additionally, and unique to the U.S. legislative and regulatory scheme, CCPs for financial futures were placed outside the jurisdiction of the U.S. SEC by the Commodity Exchange Act which was enacted in 1975. The Act made the oversight of futures CCPs the direct responsibility of futures markets, not the federal regulator, the Commodity Futures Trading Commission. Since the 1970s significant work has been done to look at the implications of combining CCPs across product types to reflect how trading is actually done, i.e. on a portfolio basis.

Evidence is still being developed on how collateral flows, including cash, could be reduced, as well as systemic risk lowered, by unifying the clearing and guaranteeing of instruments that have an economic relationship to each other in a single CCP. For example, we already know that in the U.S.

²² Morris Mendelson, Professor Emeritus in Finance, Wharton School, University of Pennsylvania

²³ The same position was taken by George S. Hender, Vice President of PBW Stock Exchange, Inc. in his 9 August 1974 letter to the SEC.

²⁴ Today multiple trading (true cross-listing) of new options products is permitted. Options Clearing Corporation, OCC is the unified result of the 1974 discussions and is owned by six exchanges.

²⁵ The CBOE created modern options in 1973 by standardizing contracts so that options were fungible and establishing a CCP to be the issuer, obligor and registrant of CBOE options. Financial futures, as currently defined, were first introduced in 1972. “Electronic Bulls and Bears,” U.S. Congress OTA, September 1990.

²⁶ Financial futures were introduced in 1972 yet by 1978 accounted for only 7% of futures market activity. “Electronic Bulls and Bears,” U.S. Congress OTA, September 1990

there are significant offsetting cash flows even among CCPs involved with instruments that are not economically related.²⁷

In 1992, a U.S. Federal Advisory Committee examined the then nine U.S. futures clearing houses and discovered that the percentage of firms at each clearing house who would have benefited from netting of cash flows across the futures CCPs ranged from a low of 57% of the members at one CCP to a high of 91% at another.²⁸ Such an integration of flows would have resulted in an average reduction in cash for afternoon customer variation calls of 25%, with a high of 59%, and an average reduction in cash for house variation of 28%, with a high of 61%.²⁹ The same study concluded that the payment integration process would have reduced original margin flows an average of 40% with a high of 70%.³⁰

In addition to legal and regulatory concerns, unification of CCPs in any region or country has to be examined in the context of both intra- and inter-product benefits to members. Recent quantitative studies of this type of benefit are woefully lacking. The United States in 1975 was entering a period of cross-market activity both within and across instruments, similar to that which many firms believe Europe stands on the verge of today. While the demographics of the firms which would directly benefit from unification of equity CCPs in the U.S. in 1975 was higher than the still mostly national markets of Europe today, cross-border activity by members is expected to continue growing³¹ even as equity markets themselves expand.³² Additionally, cross-border participants are not the only beneficiaries of unification. Economies of scale resulting in lower costs to clearing members, and the investor community, combined with safer markets create also benefits strictly local players. In the U.S. in 1976, while an average of 58.4% of the members of each of the existing equity CCPs were members of another equity CCP and stood to immediately benefit from unification, the benefits were seen as more widely distributed to all securities industry firms whether direct members of a CCP or not.³³

The demographics of what firms in Europe might benefit from integration of equity CCPs is clouded by the fact that only a limited number of markets currently have an operational central counterparty for equities. It is therefore unclear how many of the existing trading firms would qualify as direct members of a CCP, even a purely national one, which makes analysis somewhat problematic. Additionally as the rise in cross-border trading is still happening, the number of firms operating cross-border is likely to increase.³⁴ As of November 2000, in the five main European equity markets there

²⁷ Report on a Mechanism to Reduce the Volume and Number of Settlement Flows, Working Group on Clearance and Settlement, Regulatory Coordination Advisory Committee (RCAC), Commodity Futures Trading Commission, 22 April 1992. RCAC was established pursuant to the Federal Advisory Committee Act.

²⁸ Ibid, page 55.

²⁹ Ibid, page 59.

³⁰ Ibid, page 62.

³¹ Initial Report of the Committee of Wise Men on The Regulation of European Securities Markets, 9 November 2000, pages 9 and 11.

³² Initial Report of the Committee of Wise Men on The Regulation of European Securities Markets, 9 November 2000, page 11.

³³ "The Committee anticipates that the integration of the proliferating securities processing entities into a national system, together with the standardization of the forms and procedures associated with the handling of securities transactions, will have a significant impact on the profitability of the securities industry." Testimony by brokerage firms before the Committee placed the reduction in back-office costs at 25% to 30%. Securities Acts Amendments of 1975, Report of the Committee on Banking, Housing and Urban Affairs, United States Senate, 14 April 1975.

³⁴ As cross-market activity increases, the benefits of a single CCP extend to all firms regardless of size. "A more apparent economic advantage for the smaller participants would be gained by elimination of multiple clearing funds and the minimum ... deposit required in each." Gordon S. Macklin, President, NASD Inc., in testimony before the U.S. SEC in the Matter of The Application for Registration of National Securities Clearing Corporation, 1976

were 853 trading members, placing the final parent as the actual trading member whether for itself or acting umbrella over several legal entities. Of these, 749 trade on only one exchange, 57 trade on two exchanges, 13 trade on three exchanges, 16 trade on four exchanges, 18 trade on all five exchanges. This equates to 12% of the firms, if all qualified as direct members of a pan-European CCP, getting immediate benefit from CCP integration and the other 78% benefiting from lower fees due to economies of scale and lower risk. Putting aside the question of qualifying for direct membership in a pan-European CCP as distinct from a national one, it is difficult to see how any member firm could lose economically from CCP integration. If the U.S. experience is any judge, benefits of CCP integration have far exceeded expectations³⁵ even before integration across products.

Establishing a unified CCP, whether it is for a nation or region, raises economic questions for an exchange. Some exchanges may rely on income from an affiliated CCP while some others might want to. It is worth noting that in the integration of the three CCPs serving the New York market, there was an agreement with the formerly affiliated exchanges (ASMEX, NASD, NYSE) to provide a transitional per trade fee to the exchanges for “services” for several years or until “the Shareholders [the exchanges] may have found an alternative method of obtaining the necessary revenues.”³⁶

A final issue deals with competition among CCPs. Clearly the debate in the U.S. included both legal and economic arguments addressing the merits of horizontal unification versus competition from multiple vertically-siloed CCPs.³⁷ While a legal analysis is beyond the scope of this paper, it is worth noting that even in the presence of stringent anti-trust laws, the U.S. securities regulator, empowered by the U.S. legislature, was able to promote a national system for clearance and settlement while leaving open the door for any organization wishing to compete. In fact any trading space wishing to clear and settle in the U.S. without going directly to the national clearing system is free to do so as long as it meets the clearance and settlement standards set by the U.S. securities regulator.³⁸ At least one traditional trading space, the relatively recent Arizona Stock Exchange, does not clear directly through the NSCC. The concept of both direct and indirect membership in a horizontally unified clearing system has proven sufficiently robust to accommodate new types of trading spaces such as ECNs and ATs as well as an increasingly diverse participant base comprised of foreign and domestic banks and brokers.

³⁵ NSCC’s fees in year 2000 are as low as \$0.032 for equity, warrants or rights compared by other parties but cleared through NSCC. NSCC also routinely achieves a netting factor of 94% or higher thereby reducing settlement requirements for its members accordingly. NSCC’s protections have proved sufficiently robust that NSCC in dealing with the insolvency of a direct member has never had to use the guarantee fund of its members, aside from the contribution of the failed member.

³⁶ In the United States Court of Appeals, docket number 77-1199, Bradford National Clearing Corp. against Securities and Exchange Commission, pages A 1330 and 1331, agreement of NYSE, NASD and AMEX dated 3 June 1976.

³⁷ See the appendix of In the United States Court of Appeals, docket number 77-1199, Bradford National Clearing Corp. against Securities and Exchange Commission for a complete discussion of anti-trust issues and applicable case law.

³⁸ Full horizontal integration was allowed to occur in the U.S over time. In fact, no organization is precluded for applying for approval as a clearing house although in the cash equities markets none have chosen to do so.

Part B

Industry Participants' Requirements and Proposed Model

1. Introduction

Purpose and background:

Using the ESF's Central CounterParty (CCP) principles and its vision of achieving "a single pan-European CCP," the objectives of this "Blueprint" are to:

- describe the Industry's requirements for a pan-European CCP
- outline the implementation model (previously referred to as Plan B)

The Blueprint can be used in the following ways:

- to provide a target model for implementation of a pan-European CCP
- to communicate the ESF's requirements to the utilities for implementation either through the previous Plan A or the previous Plan B

This Blueprint aims to provide a solution that responds to the concern that the "tri-party" proposal, Plan A, might either not be negotiable or not result in a pan-European CCP in an expeditious timeframe.

Drivers:

The continuing pressure from market participants on the European clearing houses to consolidate has been generated by a number of factors. In this document the conceptual model is designed to provide a solution that is flexible and robust enough to satisfy the following 'drivers for change' in the shortest possible timescale:

- evolution and consolidation of the trading spaces
- fragmented European cross border clearing and settlement
- the few existing CCPs are fragmented across products and markets
- participant demand for cheaper post execution costs (European settlement is \$1bn a year more than in the US)
- increasing transaction volumes
- capacity issues for banks and utilities
- duplicate development investment spend of at least \$500m over next 2-3 years
- shortening settlement periods
- sub-optimal use of participant capital/collateral

Scope:

The industry requirement is for a cross-product European central counterparty. We believe that the largest immediate benefits and impact to the industry would be generated from a solution that prioritises equities. The initial scope of this plan will accordingly be European equities, but the intention is that the model will be extended across both fixed income and listed and OTC derivatives either immediately or at a later stage. The same "industry benefit" logic has been applied across markets and those markets with the highest volumes have been prioritised.

The markets have been split in to two categories:

Top tier (first priority):

France
Germany
Italy
Netherlands
United Kingdom

Second tier:

Austria, Belgium
Denmark, Finland
Greece, Ireland
Portugal, Spain
Sweden, Switzerland.

This document does not provide a recommendation on ownership and governance related issues. These issues will be addressed at a later stage. However, we start with a presumption that the EuroCCP would be a not-for-profit monopoly. We believe that a monopoly would capture the largest economies and so help to make the European capital market internationally fully competitive. We also expect that a not-for-profit constitution would encounter less regulatory difficulty. This could change if appropriate.

2. The Model

In order to ensure that the conceptual model is an appropriate European CCP solution it must adhere, as far as possible, to a set of fundamental principles:

Model Principles	The model must....
Credible and quickly implementable	Not develop a “de novo” clearing house
	Offer a realistic and achievable solution that satisfies participants’ functional requirements while quickly achieving greater efficiency, cost and risk reduction on a pan-European scale
Scalable	Accommodate high volumes and sharp increases in future volumes
Simple and incisive	Enable maximum connectivity with members’ back office systems at lowest cost
	Offer the most practical implementation solution, consistent with prudent financial management of counterparty risk
	Be the “best of breed” CCP solution for participants, regulators, trading spaces and settlement houses
Compliant	Operate in a single location for regulatory purposes
	Comply with international standards for clearing systems including the <i>Lamfalussy</i> standards.
Extendable	Provide a single CCP entity across product lines and pan-European markets
	Facilitate cross border settlement

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Model Principles	The model must....
Flexible	Accommodate, complement and be accessible to all providers of trading services
	Interface with local CSDs and ICSDs
	Provide multi-currency capability
Efficient	Ability to connect to multiple points to enable optimum settlement processes for post transaction processing across European markets
	Support and enhance straight through processing
	Be a catalyst for significantly reducing participants' investment spending with utilities
Legally Robust	Use a netting mechanism which can withstand the insolvency of a participant in all relevant jurisdictions
Capital Optimising	Benefit from optimal counterparty status for regulatory capital purposes
Voluntary	As far as possible, users should be free to choose all or part of the service. Users should in principle only pay for functionality that they do use.

Why an alternative implementation model?

The objective of the Industry is to create a single EuroCCP as early as possible in 2001. None of the existing European clearing houses and their corresponding systems can be practically extended on its own to deliver a EuroCCP solution within this timeframe. To accelerate the consolidation process, a more innovative approach to implementation is required. This is generically referred to as "Plan B".

Plan B could be realised in more than one form. For the sake of discussion, we have described two (alternative 1 on page 20 and alternative 2 on page 22). The choice between these (or indeed any other solution) would be driven eventually by governance, ownership and competition questions not discussed in this paper. Most of what follows relates to alternative 2 on page 22.

To design an implementable solution that adheres to both the original ESF CCP principles and the principles of this model it is necessary to break down the core functions of a central counterparty. Once broken down, it is apparent that a central counterparty can logically be grouped into two functions, Risk Management and Netting and Routing (see appendix, figure 2 on page 21).

Analysing this functional split in the context of the current CCP environment, we see that this model can be consistent with the evolution of some of the industry's existing utilities. For example the guarantor is a separate entity from the routing agent for ISMA's COREDEAL, and CREST will provide the netting function for LCH for clearing business originating from the LSE.

The central element of the alternative 2 proposal, see appendix, figure 3 on page 22, would be to create a new entity that would operate the risk management component of the EuroCCP. This would imply limited staffing and an IT platform dedicated to this

application. The remaining netting and routing functions would be outsourced to providers that already have all or most of the required capabilities including:

- extendable network with the trading systems,
- multilateral netting,
- extendable network with the CSDs, ICSDs and banks.

An outsourcing approach to a routing and netting agent would widen the number of potential entities that could operate part of the EuroCCP's functions. Agents could be a bank, a CSD or an ICSD or any other market participants and not necessarily an existing clearing house. Among this broadened group of potential providers, some are more advanced in terms of network than the existing clearing houses and may be able to deliver a quicker and more robust solution to EuroCCP.

3. Overview of Functional Requirements

Introduction:

EuroCCP aims to be the central counterparty for trades executed and assumed by its direct members across a broad spectrum of European trading spaces. EuroCCP:

- reduces systemic risk through multilateral netting by novation
- measures and collateralises the settlement risk
- guarantees the settlement obligations of its direct members
- utilises collateral to mitigate against any losses which may occur
- reduces counterparty credit capital

EuroCCP will incorporate a number of functions unique to each type of instrument it handles. EuroCCP will handle equity trades in the short-term, and the intention is to extend it later into fixed-income and derivative products. For the purpose of this blueprint we have limited ourselves to the initial functionality required for equity trades, although proposals could include these other products.

EuroCCP encompasses traditional central counterparty functionality and is intended to be implemented in an innovative manner that makes the best use of the netting and routing capabilities of CCP's, CSDs, ICSDs, banks and other market participants. The following functional requirements are represented in the order shown to correspond to the split of functions described throughout this document. Some functions such as legal novation and netting may in fact occur almost simultaneously and are not described in chronological order.

Risk Management:

Membership & Compliance

EuroCCP will publish objective membership criteria permitting credit-worthy members, meeting and maintaining defined standards, as direct members. EuroCCP

will assess the financial condition of its direct members for compliance with these standards.

The membership criteria will be structured to support the underlying purpose of EuroCCP ‘to manage counterparty risk in the event of a default by one of its members,’ while also providing a membership structure, including sub-classes if appropriate, that facilitates participation by a broad range of market participants.

Some sub-classes may not need or want the full range of functions (e.g. netting) and there are precedents on how this voluntary aspect might be accommodated. Alternatively, the needs of some sub-classes might be accommodated as clients of direct clearing members.

Novation

Matched trades will be entered on to EuroCCP’s trade register and novated so that EuroCCP becomes the “buyer to every seller” and “the seller to every buyer.” It is this novation process that makes EuroCCP the legal central counterparty to all the trades it clears. Novated trades will then be netted using multilateral netting methodology prior to being settled.

Default Fund Management

EuroCCP provides its surviving members the “benefit of the bargain” in the event of a member insolvency. This means that EuroCCP will settle trades according to the economic terms they were traded at. In securities trades, the primary risk that EuroCCP needs to protect against is the market risk of the instruments in the event of a direct member’s default. Core to EuroCCP is a series of protections that collectively comprise a financial safeguard system that can be used to cover losses generated by a member’s default.

The most widely recognised and understood component of this protection system is a default fund, made up from member’s contributions at EuroCCP in proportion to their settlement risk. Since markets usually move away from current values when a significant participant defaults, EuroCCP’s market risk values have to be adjusted for potential adverse market moves concurrent with the default of a direct member. Default fund contributions are determined on a portfolio risk basis typically using a Value-At-Risk (VAR) model. Rulebooks from a number of active, high-volume CCPs are available as prototypes and VAR-based risk platforms are commercially available. EuroCCP’s default fund will be designed to conform to the recommendations of the Bank for International Settlements (BIS) and the International Organisation of Securities Commissions (IOSCO) as well as the recommendations and requirements of the national regulators of EuroCCP’s members and settlement spaces.

The default fund is comprised of liquid assets such as cash and sovereign debt. The remainder of the asset classes allowed in the fund can be broader and can, subject to appropriate controls and agreement of the regulators, extend to instruments traded by EuroCCP’s members on the markets interfacing to EuroCCP.

Other forms of financial backing, in addition to the default fund, could be considered subject to further research. The EuroCCP risk protection will be designed to be the “best of breed” of international practices meeting the following principles:

- simplicity
- scalability
- optimisation of participants’ collateral

Consistent with applicable laws and regulations, EuroCCP will have as its goal a common collateral pool supplemented by the minimum number possible of member collateral movements. EuroCCP will also consider the interaction between its direct members and their customers and indirect members in determining the profile of assets in the default fund.

Price movements are assessed as part of the (at least) daily default fund calculation, which seeks to maximise the efficient use of members’ capital/collateral. In the event of member default, EuroCCP will then cover the losses using collateral from the default fund in an order such as:

- margin of the defaulting member,
- other collateral of the defaulting member,
- remaining collateral in the default fund proportional to member’s contributions.

Netting and Routing:

Trade Registration

EuroCCP will automate as far as possible the capture of trades arriving from the various trading spaces. EuroCCP will accept the broadest regulatory definition of what constitutes a trading space. In order to manage flows from such different sources the procedure has to be as standardised, simple, robust and as scalable as possible. Ideally incoming trades should be received already agreed by the seller and the buyer (i.e. “locked in”) to facilitate straight through processing. For trades that are not already locked-in, participants will input trading data in a trade matching system.

The trade matching system has to be standardised to ensure quick processing and highest possible STP-rates and to reduce operational failures and the need for manual intervention.

Matched trades will be guaranteed by EuroCCP as early in the life cycle of the trade as legally permitted.

Multilateral Netting

Netting optimises settlement liquidity requirements and therefore makes it less likely that a firm will fail to meet its settlement requirements, especially if credit lines become limited either due to a market disruption or economic changes associated with shorter settlement cycles. The provision of a multilateral netting facility is an industry

function that optimises the settlement process and is available from a number of sources on a variety of IT platforms.

In practical terms, EuroCCP's netting means that each direct member of EuroCCP needs only to make the minimum number of cash movements per currency, per CSD for each settlement cycle and one securities movement per issue, per CSD in each settlement cycle. The net value to be settled by each member is guaranteed in turn by EuroCCP.

Instruction Routing

EuroCCP will route net settlement instructions to settlement spaces based on issuance and member instruction. This routing is a standard function performed by all market participants in one form or another. EuroCCP's routing will seek to use existing links, protocols and relationships wherever possible.

The purpose of EuroCCP is to be settlement neutral. The ESF's objectives include rationalisation of settlement organisations and CSDs but the EuroCCP will not abuse its monopoly powers to that end. This would be alien to ESF's belief in open architectures. As far as possible, the settlement process of EuroCCP members at the individual CSDs will remain unaltered as to DVP versus FOP, timing, payment system interface, corporate actions, securities lending and borrowing, and other typical settlement characteristics. Markets that do not currently settle equities on a netted basis will require modification to functions such as fails management. Risk created by fails of guaranteed trades will be measured and mitigated by EuroCCP.

Since EuroCCP will need to grow in market share over time, EuroCCP members will also be able to effect individual, gross settlements at the CSDs on a trade-for-trade basis as they do today.

The EuroCCP Guarantee:

EuroCCP's trade guarantee reinforces the risk reduction of netting by ensuring that the net values will actually be settled by covering the market risk of the unsettled securities trades with collateral already on deposit. Supporting the default fund must be clear rules defining:

- exactly when the guarantee begins
- limits on the guarantee, if any
- how quickly members must deliver collateral
- what levels of collateral EuroCCP has discretion to ask for
- a transparent and objective policy on haircuts
- how default fund assets will be replenished if used
- the enforceability of any default fund replenishment
- who has authority to use assets and under what circumstances
- what exact classes of collateral including bank guarantees will be allowed and in what proportions to a member's required total
- acceptability of bank guarantees as collateral
- how the fund will be insulated from being involved in a member insolvency

- the ability of the members to count the assets as firm regulatory capital unless and until used by EuroCCP
- what interest members will obtain from the fund
- collateral substitution and return of excess collateral
- release of collateral in the event of member resignation

Of the rules supporting default funds, perhaps the most critical are those concerning how the insolvency of a member will be handled and mutualised among the fund's remaining members, if required. If a direct member of EuroCCP becomes insolvent, its default fund contribution will be used by EuroCCP in addition to any retained earnings of EuroCCP as the first level of assets to settle the members outstanding trades (as previously outlined in the Default Fund Management section). Only if that amount proves insufficient would the risk be apportioned to members' default fund contributions.

Assets of the default fund would only be available in the event of a member insolvency and will not be available as a liquidity fund in support of fails not related to an actual insolvency. Additionally, the rights of the EuroCCP under the bankruptcy code of each jurisdiction with respect to its relative position among creditors in access to the assets of an insolvent member needs to be clarified. EuroCCP's ability to resolve member insolvencies quickly to preserve national interests in financial markets without judicial interference will need to be confirmed or established.

In accordance with generally accepted international practice, the protections of EuroCCP extend only to its direct members. Customers of members, including firms doing indirect clearing, are not directly protected by EuroCCP although they may indirectly benefit by the protections offered. EuroCCP is not a form of investor protection.

Evolution of EuroCCP:

The above macro description of equities netting, routing and guaranteeing will, with some modifications, also apply to fixed income. EuroCCP will expand its model to encompass fixed income and derivative trades in due course. The risk of these derivative trades will be combined on a portfolio basis with securities trades although daily mark-to-market flows between derivative counterparts on a net basis by currency will be made. The acquisition of derivative specific risk systems will be considered at a later date.

4. Questions and Answers for Potential Members

- Question: Will I have to alter my back-office significantly to use EuroCCP?
 Answer: EuroCCP will seek to make its implementation as transparent as possible by using existing links, interfaces and relationships. Netting will introduce new procedures and supporting systems, which will be more than offset by settlement savings. The actual guarantee function will not require any other action by a member above normal cash and securities movement and control.
- Question: What will EuroCCP cost me?
 Answer: While it is premature to set a fee structure, the current design intent is that EuroCCP would act as a not-for-profit entity charging a cost-related fee per trade. Collateral will be posted in direct proportion to the settlement risk created by a member.
- Question: What will EuroCCP save me?
 Answer: Savings will come from capital optimisation, reduction in the number of fails, and reduced street-side trade processing. Apart from the economic value of netting cash and securities, EuroCCP long-term offers the prospect of true portfolio risk measurement across all European financial markets which could result in even larger liquidity savings.
- Question: How long will it take EuroCCP to go live?
 Answer: Phase 1, which focuses on equities, is targeted to be in place as early as possible in 2001.
- Question: EuroCCP looks innovative. Is there a precedent for this model?
 Answer: EuroCCP should be seen as the market leader in cost and risk reduction. EuroCCP's model is consistent with the evolution of clearance and settlement systems and already has precedents in Europe and elsewhere.
- Question: How does EuroCCP work with STP?
 Answer: EuroCCP, by centralising functions at the regional level, is an essential part of the jigsaw to achieving STP. EuroCCP should also enhance regulatory oversight capabilities through its provision of risk measurement on a portfolio basis at the European level.
- Question: How will EuroCCP get critical volume?
 Answer: EuroCCP rationalises the topology of Europe's clearance and settlement landscape, reduces the effective risks and cost of trading, and acts as a catalyst for further settlement reforms. This makes Europe's participating exchanges more competitive and should help to interest exchanges of all types and nationalities in participating in this scheme.

Question: If I am a member of an exchange, will I be able to join EuroCCP as a member?

Answer: EuroCCP will publish objective membership criteria and any firm meeting those criteria will be eligible to join. Being a member of a participating exchange will not be an automatic guarantee of EuroCCP membership since membership criteria will focus heavily on creditworthiness as an integral part of EuroCCP's fiduciary safeguard system.

Question: Who is going to provide the software and other infrastructure needed for EuroCCP?

Answer: EuroCCP will conduct an RFP process at an appropriate point in its development cycle. Any firm wishing to express an interest in furnishing systems or services is certainly free to submit an expression of interest to EuroCCP.

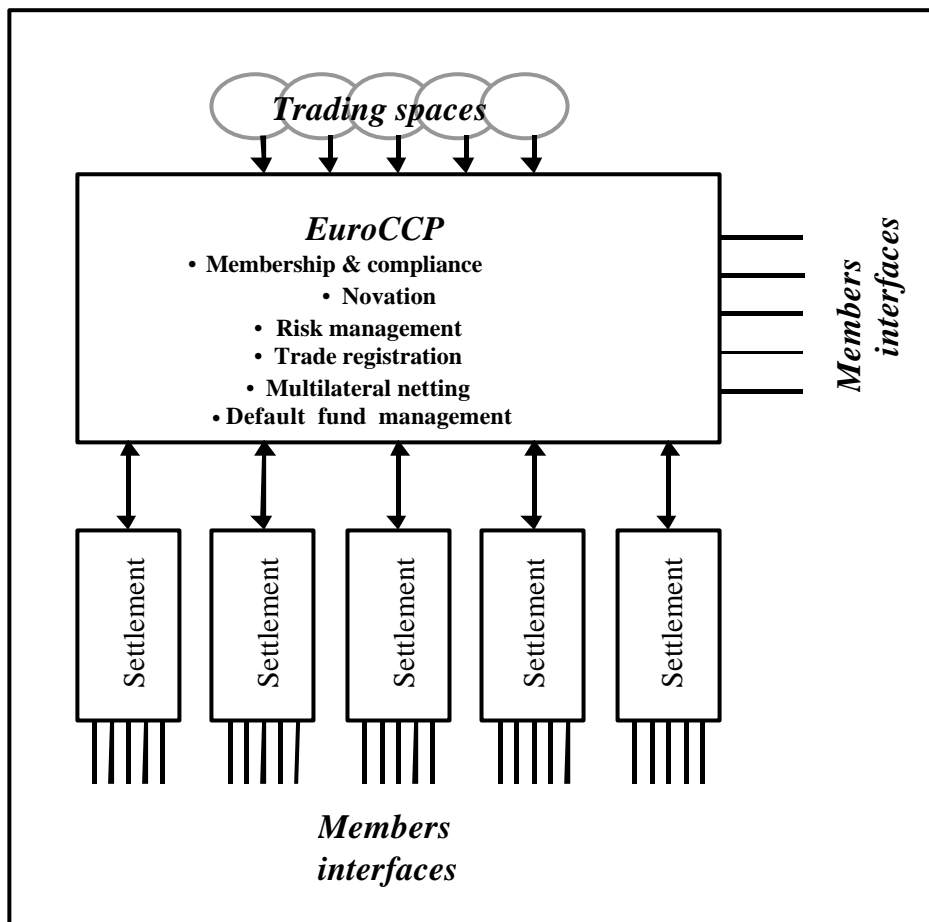
Question: How do I contact the EuroCCP Project Office with my questions?

Answer: Simply contact the EuroCCP team by telephone at 49-69-910-82492, by fax at 49-69-910-66832 or by E-mail at EuroCCP@db.com

Appendix to Part B

FIGURE 1

Alternative 1



- All CCP functions are operated by one entity
- Trading spaces, members, (I)CSDs and Banks interface with that entity

- What is required....
- 1) Source existing CCP functionality
 - 2) Build connectivity to trading spaces and CSDs and banks

FIGURE 2

What are the core functions that make up a CCP?

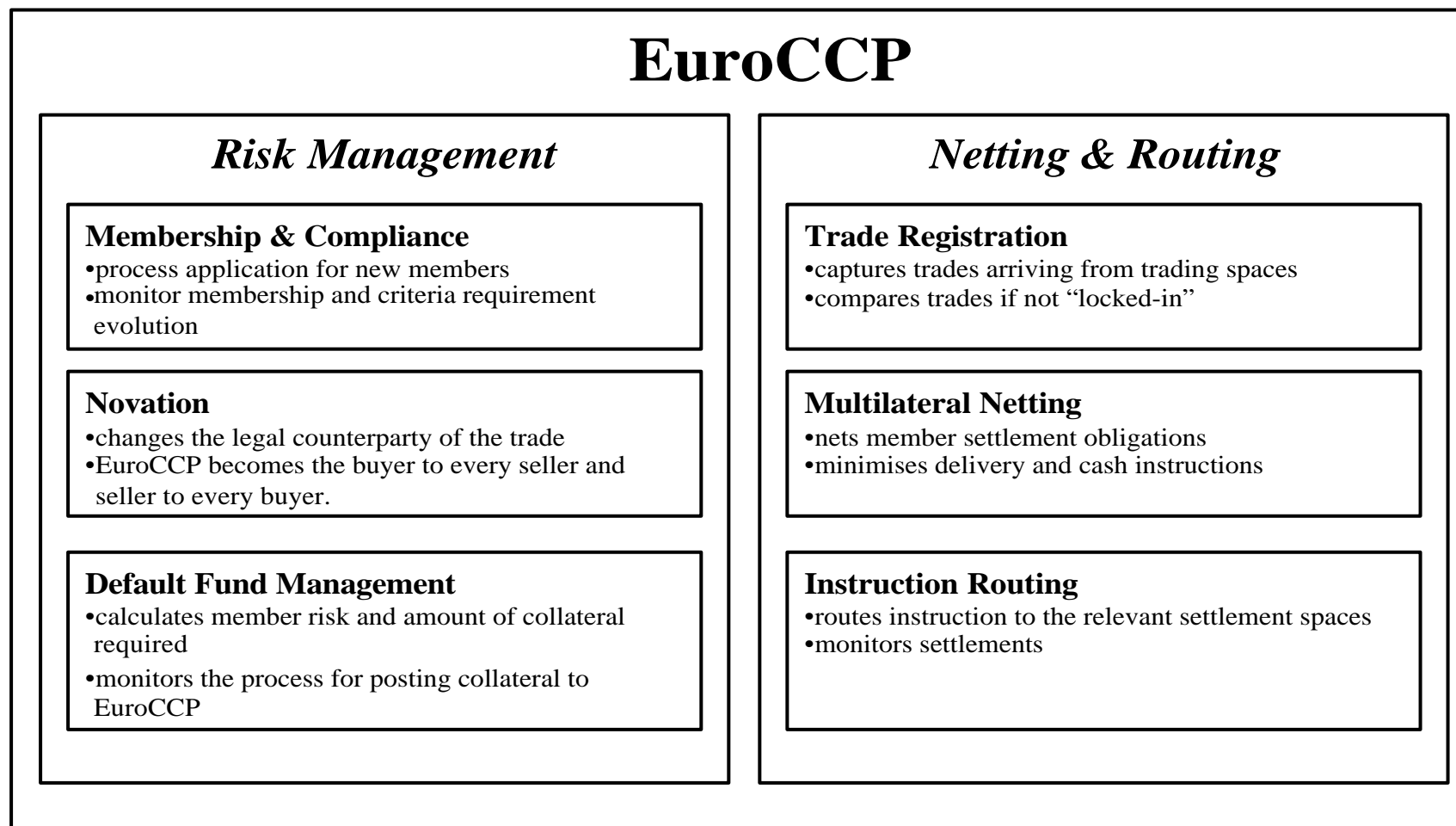
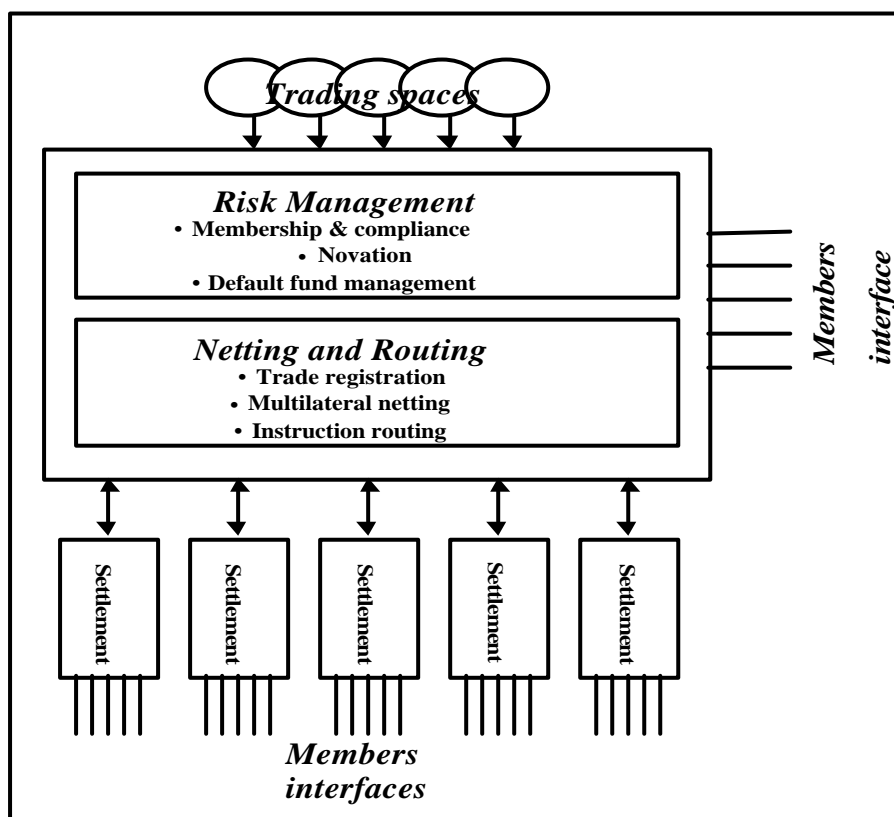


FIGURE 3

Alternative 2



- **Separate discrete CCP functions**
- **Trading spaces, members, (I)CSDs and Banks interface with the EuroCCP**

What is required....
Create two separate vehicles

- **A risk management entity**
- **A netting and routing function sourced from a facilities manager**

In practice...implement the ESF recommendations:

- **break out functionality**
- **look for alternative systems, development and management approaches**

Part C
Benefits

An Approach for Participants to Calculate the Benefits of EuroCCP

The EuroCCP solution proposed in this document, if successfully implemented, will achieve significant efficiency, risk and cost benefits for industry participants. The benefits are both qualitative and quantitative.

Each industry participant will assign different levels of importance to each of the benefits outlined below depending on their portfolio of trading activity and internal infrastructures. To enable participants to estimate and assess their own benefit levels we have shown *illustrative* working examples with formulas and *hypothetical data* that can be used by each firm, when they apply their own data, to calculate their own “quantifiable” benefits. For the benefits that are not “quantifiable” we have outlined the organisational implications for participants.

Qualitative benefits:

Many participants view the qualitative, efficiency benefits that Euro CCP targets as a higher priority than any cost saving benefits. Achieving efficiency benefits are seen as being critical because they would eliminate the increasing threat of a capital markets crisis generated by a “data crunch” caused by the combination of existing inefficiencies and rapidly rising volumes.

Benefit	Which means...
Reduces intra day credit requirements	<ul style="list-style-type: none"> • that the participant has more credit available to perform more business activity
Increases available liquidity	<ul style="list-style-type: none"> • that the participant can perform more trading
Creates a more scalable participant infrastructure – by limiting the total number of market side settlements to a number dependent on the number of securities traded and number of settlement cycles	<ul style="list-style-type: none"> • that the participant trading activity is no longer dependant on its settlement system capacity limits • that participants no longer have to invest heavily in capacity enhancement programs to their market side settlement infrastructures
Insulates the member participant against counterparty risk	<ul style="list-style-type: none"> • that the participants are protected in the event of a default by another member
Reduces the volume of static data that participants currently maintain	<ul style="list-style-type: none"> • that participants settle with a single counterparty for street side settlement thereby reducing fails/operations risk caused by inaccurate static data • that participants can reduce the number of resources dedicated to the static data function

--- table continues on next page ---

Benefit	Which means...
Reduces the number of messages (e.g. SWIFT)	<ul style="list-style-type: none"> that participants reduce their dependency on and cost of messaging
Eliminates multiple collateral pools for the guarantee fund	<ul style="list-style-type: none"> that participants' collateral management functions can be simplified and collateral requirements reduce given that collateral will be posted to a single CCP
Creates a highly <i>scalable central/</i> utility infrastructure	<ul style="list-style-type: none"> that participants no longer have to fund duplicate investment programmes at multiple CCP utilities that participants can rationalise their connectivity to a single point of entry at the European CCP level that participants are exposed to reduced levels of operations risk generated
Facilitates trade anonymity	<ul style="list-style-type: none"> that participants benefit from additional liquidity that trade anonymity theoretically generates

Quantifiable Benefits:

To illustrate the potential “quantifiable” savings across the five prioritised markets the following parameters have been used:

- There are 250 trading days in the year
- Total number of trades per day is 3000 (for all 5 markets) i.e. 750,000 per annum
- Average value of each trade is 10,000 Euros
- The participants average internal cost of processing is 10 Euros
- The participants average external cost of processing is 10 Euros
- The collateral required by EuroCCP equates to 5% of open trades
- The rate of return on capital is 5% per annum
- The average fail rate is 5% i.e. 150 per day or 37,500 per annum
- The netting factor is 75%

The savings areas, formulas and results, using the hypothetical parameters above, are shown below:

1. *Reduction in the cost of external processing (e.g. clearing house and (I)CSD costs):*

This is calculated by taking the current cost of external processing away from the future cost of external processing, using the 75% netting factor:

$$\begin{aligned}
 & \text{(External trade processing cost X \# of trades p/annum)} \\
 & \text{minus} \\
 & \text{(External trade processing cost X (\# of trades p/annum X (1-netting factor)))}
 \end{aligned}$$

Using this formula the current cost in this example of external processing is 7.5m Euros per annum. Using the netting factor of 75% your future external trade processing cost would be 1.875m Euros *i.e. a saving of 5.625m per annum.*

2. **Reduction in the cost of processing internal street side transactions:**

This is calculated by taking the current cost of internal processing away from the future cost of internal processing, using the 75% netting factor:

$$\begin{aligned} & (\text{Internal trade processing cost X \# of trades p/annum}) \\ & \text{minus} \\ & (\text{Internal trade processing cost X (\# of trades p/annum X (1-netting factor))}) \end{aligned}$$

Using this formula the current cost in this example of internal processing is 7.5m Euros per annum. Using the netting factor of 75% your future internal trade processing cost would be 1.875m Euros *i.e. a saving of 5.625m per annum.*

NOTE: The size of this saving will be largely proportional to the level of automation of the participant's infrastructure.

3. **Reduction in collateral requirement to guarantee the settlement:**

Participants are required to put up collateral to guarantee the settlement of their portfolios; by having one CCP rather than many, it significantly reduces the collateral requirement. In this model the daily value of the participants trading activity is 30 million Euros per day (no of trades per day, 3000 X 10,000, the average value of a trade). To demonstrate the benefit we will assume that there are three CCPs and that half of the netted activity are purchases through one of the CCPs.

CCP A Net portfolio exposure	CCP B Net portfolio exposure	CCP C Net portfolio exposure	5% collateral requirement
-7.5m Euros	-7.5m Euros	+15m Euros	1.5m Euros per day

Using a multiple CCP model, the collateral requirement would equate to 1.5m Euros per day. Using the EuroCCP model and the example outlined, the daily collateral requirement would be zero thereby releasing 1.5m Euros per day for other uses.

4. **Reduction in the cost of fails:**

This is calculated, excluding the cost of securities borrowing for simplicity, by taking the current cost of fails away from the future cost of fails, using the current rate of return on capital:

$$\begin{aligned} & (\# \text{ of trades currently failing per day X av value of a trade X av rate of return on capital}) \\ & \text{minus} \\ & (\# \text{ of trades currently failing per day X (1-netting factor) X av value of a trade X av rate of return on capital}) \end{aligned}$$

Using this formula the participant in this scenario would have 37,500 fails per annum with 150 fails outstanding on any one day. The current cost of fails is 75,000 Euros per annum. However, if we assume that the number of fails reduces in proportion to the netting factor the cost of fails would be 18,750 Euros *i.e. a saving of 56,250 Euros per annum.*