

# **Toward an Integrated Cold Chain**

Alan Kennedy

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## TOWARDS AN INTEGRATED COLD CHAIN

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Partnering, collaborative working and integrated supply chain are terms that are frequently mentioned when the pharmaceutical industry talks about improving its cold chain performance and efficiency. In this chapter, collaboration champion Alan Kennedy presents the case for a managed team-work approach to pharma-logistics.

### **STRUCTURED MULTI-PARTY COLLABORATION IN PHARMA DISTRIBUTION – WHAT IT IS AND WHY IT IS NEEDED**

Close collaborative working between disparate stakeholders lies at the very heart of many pharmaceutical industry operations and, to varying degrees, is the norm for activities such as product licensing, product co-development and outsourced manufacturing where mutual collaboration is either commonsensical or unavoidable.

But one part of the pharmaceutical industry that remains a long way from embracing the full potential for supply chain integration is the area of cold chain logistics. The physical movement of

temperature-sensitive products from and to the point of production is an area where much needs to be done as market transformations start to challenge conventional distribution practices and drug development becomes more focused on highly sensitive biologics.

## **Tomorrow's pharmaceutical supply chain**

The rapid contraction of pharma product life-cycles together with escalating environmental, regulatory and energy issues, greater competitive pressures, growing market volatility and the huge impact of advancing technology, taken together will have a transformational effect on the pharma-logistics chain of the future. Tomorrow's pharma supply chain will need to apply network responses to these challenges and use technology to integrate processes, monitor performance, improve communications and facilitate data exchange.

These changes are being propelled partly by the accelerating expectations and sophistication of today's pharma consumer; a trend that is creating an unprecedented wave of value-driven and choice-driven demand. Market expectations of service and quality are continuously advancing with the patients and health product consumers of today seeking and expecting more service, more safety, more value and more customisation.

For these demands to be met there will need to be some serious supply chain innovation and continuous efficiency gains on the part of manufacturers. The winners in this scenario being those companies that can best leverage the collective muscle of their supply base in order to create sustained customer satisfaction and loyalty.

Nonetheless, the price of progress can be high and it is becoming increasingly difficult for pharmaceutical companies to reconcile the mounting pressures on drug pricing with the inexorable demands for greater R & D productivity, continuously improved market performance, faster digital transformation and more agile business models. And both pharma manufacturers and logistics companies are being forced to negotiate an ever more intricate labyrinth of regulations, performance standards and market

idiosyncrasies while maintaining the profitability necessary for innovation, business development and shareholder return.

These challenges are particularly acute in developing regions where there can be additional risks associated with infrastructure limitations, tax, duty and regulatory complications, counterfeiting issues, poor market data, ramp and terminal handling inefficiencies, language barriers and a lack of trained manpower. It all makes for a conundrum that can only be resolved through a fundamentally new approach to pharma-logistics; one which reduces risk and increases efficiency.

In the rest of this chapter we will debate the need for reform in pharmaceutical logistics practice, explore the need for a new relationship between stakeholders in the pharma cold chain and investigate the potential for genuine supply chain integration.

## **The potential for optimisation**

Supply network optimisation offers a clear route to meeting the escalating requirements of the market whilst, at the same time, securing long-term profitability and market respect for the participating organisations. Amongst the industry's more progressive organisations the efficiency battleground is moving from the factory to the supply chain with its huge potential for productivity gains, competitive advantage and, of course, cost savings. Research by Accenture (Kammerer, 2013) has shown that, by implementing global strategies to optimise freight-related spend, shippers can lower transportation costs by up to 25 percent. Similar levels of savings have been recorded in other studies of pharma-logistics rationalisation (Alicke, 2011).

## **CHARACTERISTICS OF AN INTEGRATED LOGISTICS NETWORK – WHAT'S SO DIFFERENT?**

Businesses have always collaborated. Indeed, it is impossible to conduct any form of business without a degree of collaboration. But it was not until the last quarter of the 20th century that the

potential for structured “win-win” collaboration started to be taken seriously in the commercial world and led to the first “integrated” supply chains.

The distinguishing hallmarks of an integrated supply chain can be seen in Figure 1 and some, if not all, of these properties will always be apparent in a successful supply network.

**Figure 1**

<b>Traditional Supply Chain vs Integrated Supply Network</b>		
	<b>Integrated Network</b>	<b>Traditional Supply Chain</b>
End-to-end supply-chain visibility	Excellent	Poor
Information transparency	Excellent	Poor
Logistics strategy	Demand driven	Supply driven
Commercial agility	Good	Poor
Logistics function status	Value-generating	Cost-centre
Corporate culture	Risk-sharing	Risk-transfer
Early involvement	Yes	No
Continuous improvement	Yes	Not structured
Inventory levels	Low	High
Formal risk/change-management approach	Yes	No
Fragmented logistics capability	No	Yes
Formal collaboration agreement	Yes	No
Performance-based network management	Yes	No

Source: (Kennedy 2015)

However, these characteristics need to be more than just in evidence, they must be at the very heart of the operation. This is because integration is a long-term, strategic commitment and requires engagement, commitment and a cultural shift throughout each of the stakeholding organisations. Figure 2 presents the characteristics of the underlying relationships in this integrated environment (Newman 2010).

**Figure 2 The successful ingredients of a collaborative relationship**

- **Commitment from senior management from both organisations**
- **Recognition that collaboration requires effort from both parties**
- **A clear strategy that defines the aims, objectives and long term goals**
- **Clear communication of these aims etc, to employees within the collaborating organisations**
- **Clear measurable, value for money benefits**
- **Agreed, measurable, and realistic performance indicators**
- **Candid, frequent and open communication between all parties**
- **Effective mechanisms for dispute resolution**
- **An exit strategy that specifies under what circumstances each party would want to withdraw from the relationship**
- **Above all TRUST!!**

Source: (Newman 2010)

### **Barriers and benefits – why is integration so difficult in practice?**

The level of multi-party collaboration that is evident in the pharma-logistic space generally falls well short of what is deemed good-practice by contemporary business standards. Despite the principles and methodologies of multi-party structured collaborative working having been vigorously developed in other industry sectors over the past three decades, there has been very few attempts

to initiate supply chain integration in pharma-logistics. Here a supply chain mentality of blinkered self-interest continues to be the norm; a reactive, silo-centric disposition that is rooted in a bias towards transaction-based business models.

The path from a transactional/tactical supply chain to a holistic partnership model can be a long one and there are a number of intermediate variants that can be seen in Figure 3 (Kennedy 2015). But with the rapidly-changing pharma-logistics environment of globalisation, regulation, technical change, modal shift, customer-centricity and much more, the time has come for supply chain players to progress from conducting “just good-enough practice” to providing genuine “best practice” if they want to survive in tomorrow’s increasingly global, competitive and disrupted business environment. For this to happen they need to rethink how they work together in order to optimise operational efficiency, intelligently exploit data, reduce risk, drive innovation and increase competitive edge.

Kate Vitasek from the University of Tennessee and one of the world’s principal exponents of supply chain reform puts it succinctly: “For simple transactions with abundant supply and low complexity, a transaction-based business model is the most efficient model.

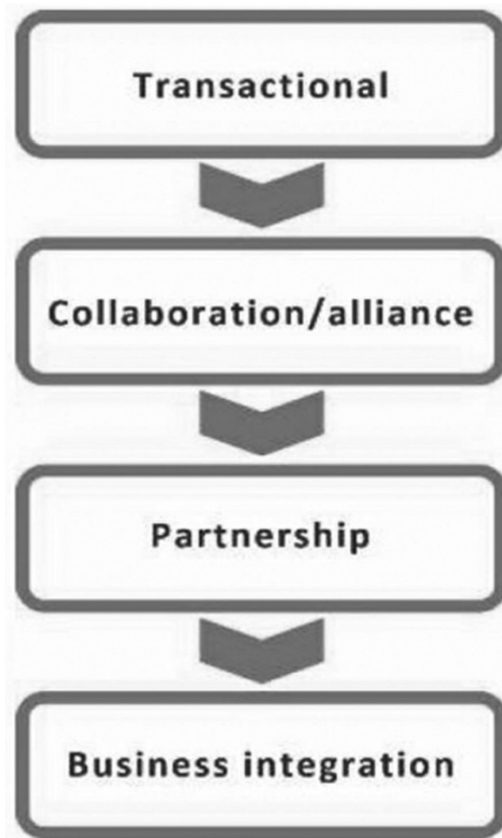
However, the real weakness of a transaction-based approach emerges when any level of complexity, variability, mutual dependency, or customised assets or processes are part of the transaction. A transaction-based approach cannot produce perfect market-based price equilibrium in variable or multidimensional business agreements (Vitasek 2016)”.

### **The need for customer focus**

Sir John Egan, one of UK industry’s most influential champions of integrated working, identified “focusing on the customer” as a cornerstone of his collaboration philosophy. In illustrating his principles, which were originally aimed at the built-environment sector, Egan drew upon his experience in the automotive industry. His was



**Figure 3 Path from a transactional/tactical supply chain to a holistic partnership model**



Source: (Kennedy 2015)

more than a just a sideways glance at car making's famous production efficiency; it was an emphatic lesson in consumer awareness.

It was not lost on Egan that car companies had come to realise some time ago that their long-term commercial interests were best served, invariably, by pursuing a supply-chain-wide "customer is always right" approach. In much of the automotive industry the concepts of commercial mutuality and interdependence are well understood. Here the big car manufacturers work in a methodically interconnected style with their supply partners; intimate relationships where the suppliers are party to sensitive demand and other commercial data, are incentivised to invest, are given technical and commercial support, and enjoy very long service contracts. Although

these suppliers are subject to intense cost pressures they are never squeezed to the point of collapse, they have long-term security of business and, with manufacturer support, they often operate at the very frontiers of technology.

This is the type of symbiotic relationship that needs to be developed in pharma logistics. Egan believed that his was a philosophy that needed to be comprehensively embraced on the basis that only by the entire supply chain becoming “customer driven” could waste be eliminated and value optimised. In this respect, pharma-logistics is no different from the automotive or any other industry. Integration has to be driven from the primary standpoint of placing customer satisfaction, and ultimately patient safety and curative outcomes, at the centre of the entire process.

Unfortunately, for many businesses in the pharma-logistics sector, Egan’s vision of respect for the ultimate customer remains resolutely out of focus. Of course, it is hardly surprising that the health of the final medical patient is not going to be foremost in the minds of the small independent trucker under relentless pressure to meet tight deadlines or the hard-pressed ground-handler struggling to comply with strict cold chain protocols.

Yet amongst senior management at a corporate level, where there is both a fiduciary and moral duty to satisfy the ultimate customer, very few of the stakeholders in the pharma supply chain seem motivated under the current system to look much beyond the demands of their immediate paymasters in the transactional cycle.

### **Inherently flawed**

In practice, the pharma-logistics process typically involves a fragmented chain of participants, each party being contractually liable only to its immediately adjacent (Egan 1998) links. This is an arrangement that is inherently flawed. For a start, it usually revolves around the principle of competitive bidding as the primary mechanism for selecting suppliers and controlling costs.

And while cut-throat tendering may be an extremely efficient means of keeping bid submissions low, it is not nearly so efficient in delivering whole-life value for money. Wholly transactional supply chain relationships serve to dump risk down the contractual chain, militate against innovation, are inherently sub-optimal from an efficiency standpoint, restrict open communications, and lead to an antagonistic operating environment.

The net result is that shippers often end up with logistics partners that are badly matched to their specific needs; their main qualification being the submission of a temptingly-low initial price. Both logistics suppliers and logistics buyers tend to see no further than their own narrow goals when what is really needed is an end-to-end buyer-supplier system that automatically creates interdependency and mutual trust.

### **Escaping the silo-mentality**

A real opportunity rests to reap the huge savings available from leveraged synergies, co-ordinated value engineering, seamless information exchange and continuous process improvement. But to embed the principles of interdependence and bring a longer-term focus to pharma-logistics requires a completely new pharma-logistics paradigm; one that harnesses the self-interest of individual parties to the benefit of all. One that is defined by mutual goals and sustainable strategic relationships. Recent research (Kammerer 2013), for example, indicates that savings in distribution costs of between 5% and 15% along with inventory reductions of up to 15% are achievable to pharma shippers through a systematic harmonisation of the supply-chain.

### **Information visibility and knowledge sharing**

A lack of supply chain transparency is frequently cited as a major barrier to efficiency in the pharma logistics process. However, traditional “master-servant” commercial relationships see information as proprietary knowledge and opposing parties use it as a bargaining chip in win-lose negotiations. Indeed the presence

of unilateral communications and the monopolising of data are two of the most obvious manifestations of a dysfunctional supply chain.

However, by opening up communications and sharing information, an integrated pharma cold chain can generate huge across-the-board efficiencies. Why shouldn't a pharma shipper have direct access to the airline or shipping line transporting its products? Why can't temperature data be shared simultaneously? Why isn't there more "open-book" accounting? The answer to these questions largely rests in overcoming the lack of trust, and by replacing the outmoded contractual relationships, which characterise today's pharma cold chain.

### **Can self-interest and collective interest co-exist?**

Improved logistics efficiency, greater customer satisfaction and increased patient safety will increasingly depend on the strategic alignment of all supply chain stakeholders. For this to happen, these parties must not only understand their own respective roles and needs, they must also understand the needs of their supply chain partners and those of the ultimate consumer.

Easy to say but difficult to achieve. Traditional bid-buy supply chain relationships are characterised by silo-mentalities and adversarial tendencies both of which are behaviours more associated with supply chain collision than supply chain collaboration. Being part of a strategic network is not an end in itself or a panacea, but a means of continuously managing ongoing business interactions to mutual advantage. Indeed, a truly integrated series of relationships can only work when the different parties involved have a pecuniary interest in each other's success.

Nonetheless, multi-party collaboration is never going to replace crude self-interest as the primary driver of business behaviour and performance. This means that one of the keys to making an integrated supply chain work in practice lies in orchestrating a coalescence of enlightened self-interest and deferred gratification amongst

the stakeholding parties in order to strike an optimal balance between individual advantage and mutual advantage.

How this might be achieved in practice is examined in the next section, followed by a practical example.

### **Practical guidance – starting the journey towards integration**

When it comes down to supply chain collaboration many executives justify their implacable inertia by believing, or claiming to believe, that they already operate in an integrated environment. This can be self-delusion at best, dereliction of duty at worst. Some supposed “integrated” supply chains are nothing more than conventional buyer-seller relationships loosely overlaid with hazy aspirational goals that are neither culturally nor operationally embedded. Others are little more than dominant two-party cabals that act to alienate and bulldoze weaker elements in the chain. Whatever the case, these positions reflect the tendency of powerful parties to persist with the age-old tradition of aggressively nailing weaker suppliers to the floor in an, ultimately self-defeating, attempt to squeeze ever-lower prices.

Which is regrettable since true supply chain integration only takes place when the entire logistics chain is involved from the outset and works smoothly and seamlessly towards common goals. There has to be a realisation that the big pay-off from integration doesn't rest in sucking the life-blood out of the supply chain. It rests in all members of the supply chain working together to jointly add value and collectively eradicate the sector's waste and inefficiencies. For tangible integration to take root, each potential member of a network must be wholly appreciative of the symbiotic nature of the relationships involved and have respect for the contribution of others.

**Figure 4 Ten steps to integration**

Step 1: CEO / Board / Senior Management Buy-in, Authorisation and Commitment.
Step 2: Establish Internal Cross-Departmental Management Group.
Step 3: Strategic Planning Stage.
Step 4: Appointment of Independent Partnering Advisor.
Step 5: Tactical Planning Stage.
Step 6: Partnet Identification and Selection.
Step 7: Put Network Council in Place.
Step 8: Conduct Pilot Programming.
Step 9: Programme Roll-Out.
Step 10: Ongoing Network Performance.

**“It’ll never work!” – Overcoming scepticism**

Integrated working is still a long way from being the norm in business. Few transacting parties see the value in building a complex collaborative ecosystem built around shared goals when, with minimal effort, they can adopt a traditional win-lose stance and rely on the presumed security and certainty of a lawyer’s contract or, in some cases, “buyer bullying”, in the event of a problem.

Natural scepticism abounds and many see the implementation of integrated working as unrealistic simply because of the complexity and hard work involved in establishing and maintaining sustainable logistics chain partnerships and the difficulty of establishing genuine trust between network partners. Such deep-seated

attitudes need to be addressed through a root and branch realignment of personal beliefs and corporate values. To overcome natural unease it is necessary to conduct in-house educational and training and team-building sessions that explain the philosophy behind integration, provide credible examples of successful collaborative projects, motivate real program “ownership”, and, crucially, explain the benefits and upsides to all those involved.

## **A measured approach**

Any company wishing to establish, develop or be part of an integrated logistics network needs to adopt a systematic approach. As an organisation works toward integrating its internal functions it will begin to understand the workings of the larger ecosystems to which it belongs which, in turn, will generate a clearer understanding of the scope of supply chain integration. Figure 4 shows a sequence of steps that can be followed that are illustrative of a programme by a “Network Principal” to establish an integrated cold chain network.

## **The network principal**

In most integrated networks there will be a “Network Principal” or “champion”. This is a visionary organisation that conceives, establishes and drives the network and, ideally, this might be a strong pharmaceutical manufacturer i.e. the “pharma shipper”. However, in some situations it will be desirable, or necessary, to establish an independent “umbrella” party, in the form of a “neutral trustee”, which will co-ordinate and manage the network and ensure it operates within the bounds of competition and anti-trust legislation.

Supply chain integration requires time, commitment and top-to-bottom buy-in from the Network Principal. Strong senior management involvement and dedication are required to overcome the barriers that prevent true collaboration from germinating. In particular, the CEO and senior management of the core organisations must be fully, and universally, behind any strategy of supply chain integration.

These directors and senior managers have a pivotal role to play and need to be prepared to make collaboration and integration a centrepiece of corporate strategy. They must understand that boardroom ideals and published goals have to be translated into belief, understanding, commitment and action throughout the organisation and they must work together to support the removal of all internal structural, operational and psychological barriers that may work to prevent collaboration.

Furthermore, management must understand that an integrated supply network will not “just evolve” from any lesser forms of collaboration that may already exist in the organisation. Although change is fundamental to survival, it is rarely welcomed, which means that commitment from all levels of an organisation’s management is necessary to drive staff understanding and engagement.

### ***Quick hit objectives***

It is suggested that a three-year integration strategy is devised containing initial, intermediate and long-term goals. The short-term goals to focus on “quick hit” objectives which will serve to motivate the development team, bring early rewards and inspire deeper collaboration. These objectives, for example, might be focused around meeting challenging, yet realistic, GDP compliance or temperature excursion KPI targets.

As trust develops, and the benefits accrue over time, an interdependent and mutually supportive network will emerge where communal, leveraged solutions are second-nature. By this stage the network objectives will be more sophisticated and are likely to include challenging cost-attenuation targets, pain-gain supplier incentivisations, open-book accounting, and increasingly demanding risk, quality and continuous improvement goals.

### **Strategic measures**

The practical realisation of an integrated cold chain is the responsibility of the different functional heads in a company and for this reason it is recommended that a central executive team is



established for the purposes of developing and executing the plans and projects necessary to establish and maintain the network. It is the responsibility of this team to take the mission and aspirations of the board and translate these into strategic objectives.

This strategic planning stage has two facets:

- Internal: interpreting “big picture” integration objectives into realisable goals and action plans within the company.
- External: designing the integrated supplier network with its required structure and format, selecting its key members, and developing its desired management, process and control mechanisms.

### **Tactical measures**

As with the strategic stage, the tactical planning stage has both internal and external facets:

- Internal: developing the network’s strategic objectives into meaningful departmental goals, responsibilities, action plans, SOPs, projects and cultural programmes for absorption and implementation by the organisation’s internal staff.
- External: developing a road map for the physical implementation of the network including control mechanisms, process improvements, performance measures, reward systems, communication systems, participant recruitment, dispute protocols, network terms of reference and exit options.

### **Partner selection**

The aim of a network selection exercise is to identify a synergistic group of partners that, together, can create sustainable mutual value by delivering superior performance in critical areas such as responsiveness, economy, speed, quality and innovation. The CEOs

and senior management of the partners that are selected must fully support a strategy of supply chain integration.

The Network Principal should consider as many alternatives as possible before committing to any individual supplier. The use of a probationary period is recommended and the Form of Agreement used must be explicit with respect to conditions of engagement, determination and exit. Be aware that in a huge proportion, if not majority, of integrated network scenarios there will be a need for competing supply partners to work alongside each other as part of a functioning network. This does not necessarily present any problems so long as they are all working to the same standards and operating under the same rules.

The appointment of partners will culminate in the signing of the appropriate partnership documentation together with all attendant formalities. Once a kernel of network participants have been appointed it is time to put a Network Council in place.

### **Partner qualification**

The identification of suitable network partners is an absolutely critical part of the entire integration equation and yet it is surprising how many lead companies just assume that they can cajole, or even strong-arm, their existing trading partners into working in a completely new way.

Although in many cases existing suppliers may indeed be the sensible, perhaps even the only, choice of partners, the fundamental change in the nature of the relationship may prove to be an exceptionally difficult, even impossible step, for some traditional suppliers to take. When seeking or approving potential network partners a suitable pre-qualification protocol should be followed; one that specifies the conditions of engagement, details the minimum standards of performance and, very importantly, explains the importance of the right cultural fit.

This is because one of the most important attributes of any strategic partner relates to its mindset. Without an internal culture and vision of mutuality a collaborative business relationship cannot endure. Therefore, a network pre-qualification programme must be in place to assess a company's propensity for partnering; a process which goes beyond the normal technical proficiency/certification criteria covered by most pre-selection schemes. As an example, as part of a pre-qualification process a potential pharma-logistics network partner might be required to:

- Be able to provide the required services from a technical and capacity perspective.
- Have the necessary technical, financial and managerial reserves and stability.
- Have the desired GDP, quality systems and other accreditations, compliance and training in place.
- Have a track record of performance, quality, flexibility and profitability.
- Be pursuing a recognised agenda for environmental management, sustainability and corporate social responsibility.
- Meet recognised standards of health, safety and staff welfare.
- Show willingness to work as part of an integrated logistics solution and function as a team-player.
- Demonstrate a readiness to adopt an agreed network rewards structure.
- Consent to a binding dispute-resolution process.
- Commit to a programme of managerial and operational measures such as linked computer systems.

- Actively cultivate a culture of common goals, shared vision and mutual respect.

### **Neutral network trustee (NNT)**

The establishment of an integrated supply chain network introduces a number of potential concerns which can be addressed through the use of a “neutral network trustee” (NNT), an autonomous, third-party body that operates completely independently from both the Network Principal and all network participants. One of the critical functions of an NNT is that of ensuring legal compliance with all prevailing competition and anti-trust legislation.

Although a properly constituted integrated network is not, per se, harmful to competition, all such groups must scrupulously avoid even the appearance of being a vehicle for firms to reach unlawful agreements regarding prices or indulge in other acts of anti-competitive behaviour. On no occasion must any participant organisations or staff be involved in facilitating explicit or tacit collusion or any other form of anti-competitive activity. The use of an NNT is a tried and tested means of introducing a buffer between network competitors in order to ensure that any such activity is prevented and that no legally-permissible activity is misconstrued otherwise.

This is particularly necessary where there is, for example, horizontal collaboration between shippers in order to aggregate volumes for greater efficiency and reduced cost. Using an intermediary in the form of an independent NNT serves to remove any possibility of collusive activity or restrictive practices taking place between the collaborating organisations.

The presence of an NNT helps create an environment of mutual trust, fair play, transparency and healthy co-operation without fear of being judged as anti-competitive. The existence of an independent legal entity at the core of the network also allows the network as a whole to remain as a “non-entity” from a legal perspective. In the absence of a NNT there is the possibility

that the network could be perceived to have, or deemed to have, a discrete legal existence, which would be undesirable.

Another key role of the NNT is to ensure adherence of the network to the programme's overarching Partnering Agreement and to all Competition/ Anti-Trust provisions and, in this respect, it is not only a facilitator but can be the ultimate arbiter in the event of any serious disagreements or friction amongst the network players.

## **Network Council**

Once the network participating organisations have been appointed, a Network Council serves as a consensus platform to fulfil network governance, facilitate network communications and decisions, and to function as a "Centre of Excellence" for continuous learning and improvement.

The Network Council would typically comprise the Network Principal, a senior representative from each of the Network's constituent members and, if applicable, a representative from the NNT. Decisions by the Network Council will normally be taken on democratic lines in accordance with the agreed terms of the network constitution or partnering agreement. Its remit may be limited to strategic, constitutional and crisis matters where the day-to-day affairs of the network are being handled by a NNT or other third-party administrator.

## **Rewarding performance**

The best-performing integrated networks will always be those that adopt creative and equitable approaches to value distribution. Therefore, it is important that a well-thought out, mutually agreed, performance-management structure is put in place to reflect the differing contributions within the network.

The rewards on offer must be proportionate to the impact and value that each member adds to the network. Note that if such a

scheme is not put in place then higher-performing network members will quickly become disenchanted and the viability of the entire network will be put at risk.

### *Incentivisation*

Maximising incentives will promote efficiency and stimulate innovation and there are many possible reward structures that might be considered. Pain-gain recompense, milestone agreements, innovation carrots, and incentive-costing arrangements are just some of these.

Whatever reward system is adopted, the key is that it must be in every network-member's interests to work as part of a team to reduce the overall costs of the logistics service and improve its performance and efficiency. And, in the event of a service or performance breakdown, all network members must be prepared to take their share of the resulting encumbrance and loss. In most cases some form of pain/gain system that ties network members to pre-defined network-performance outcomes will be appropriate.

Rewards and performance-based remuneration can be tied to the overall success of the logistics service against agreed, weighted, performance benchmarks or milestones in areas such as cost savings, time of delivery, temperature outcomes, GDP compliance, environmental record, safety performance and shipment security.

A combination of such a network-wide KPI-system together with process- and company-specific targets and benchmarking will encourage mutuality through communal decision-making and joint solutions and ensure that a supplier's net compensation is tied not only to its own performance, but to that of its network partners.

### **Tiered network structures**

A successful collaborative model will always demand a high level of commitment and capability from its members. For this reason it may be necessary to either operate a tiered network structure

and/or to have a probationary scheme in place where new network members can remain on a provisional basis until they meet all required participation criteria. Until this point is reached a probationary member would enjoy some, but not all, of the network benefits.

A multi-tier network structure can also accommodate those secondary suppliers and complementary service providers that are auxiliary from a strategic perspective but who have legitimate reasons for being part of the team.

### **Don't you trust me? – The role of contracts**

While the idea that groups of independent yet closely integrated companies can work closely together “on a handshake” may appeal on a spiritual level to a handful of business romanticists, but it is fanciful to think that a collaborative system based on mutual dependency can exist without a supporting contractual framework.

Any buyer-seller relationship revolves around the distribution of risk and this inevitably creates tensions, with a corresponding propensity for uncertainty and dispute. As any commercial lawyer will tell you, whenever you have two or more independent commercial parties coming together, there is a need for contracts.

Commercial contracts seek to govern the nature of the relationships between the various parties involved in such transactional settings by setting out legally enforceable obligations and conditions. However, due to their unsurprisingly legalistic nature, commercial contracts are a zero-sum game where one party gaining invariably means another party losing. In other words, contracts are essentially adversarial in nature.

Clearly, this inherently confrontational system sits rather uneasily with the philosophy of togetherness implicit in an Integrated Network approach. Collaborative working seeks to reconcile conflicting interests and by doing so, to avert friction and inefficiency. It is premised around the view that by working towards mutual goals all parties can gain.

Happily, this apparent contradiction doesn't, in practice, have to result in irreconcilable positions. While any long-term business relationships will require certain legal and financial provisions, in an integrated logistics network it is the behaviour and performance of the network parties that will ultimately determine the overall success of the collaborative venture.

In many cases of network integration, the simplest way to resolve the commercial egocentricity that is inherent in legal contracts is to execute two concomitant forms of agreement and implement these on a hierarchical basis.

### **The partnering agreement**

A "Network Partnering Agreement" (NPA) can be formulated which assigns responsibilities and risks within a mutually agreed operating framework and which is predicated around collaboration and common goals.

This would normally be a universal, network-wide, document that sits alongside individual service and supply contracts. Such an agreement can be expressly constituted as a non-legally binding set of rules and conditions and this removes the problems associated with multi-party contracts including their broad acceptability and their validity in different legal jurisdictions.

Rather than being a contract, the Network Partnering Agreement is an overarching "umbrella" agreement that articulates the essential relational rules, principles and commitments that are necessary for the creation and maintenance of a strong, stable network; one that is fair, reliable, transparent, principled and trusting. It would include provisions, *inter alia*, for decision-making, confidentiality, communications, IP matters, dispute resolution, network composition and development etc.

Although not enforceable through a court of law, in the context of a collaborative network such an instrument is enforceable, *de facto*, through the common will of the network. For example, if



a network partner is grossly or consistently in breach of the terms of the NPA, the network, through a pre-agreed democratic process, can invoke the remedial provisions of the NPA. This will include the ultimate sanction of removal from the network.

Terms in the NPA would also dictate the circumstances where the legally binding service, and other, contracts would come into play. For example, in the case of disagreement or non-performance, any legal rights under a service contract or under Common Law will only be accessed after all the dispute resolution provisions of the Partnering Agreement have been applied and exhausted.

Such a dual-agreement approach acknowledges that a partnering agreement is not a substitute for a normal commercial service or supply contract. Both are necessary in most integrated supply chain scenarios. However, the structure and content of these legal instruments should be such that they reflect the existence of a partnering relationship and they must be devised to facilitate, not undermine, the overarching Partnering Agreement and be free from conflicts and inconsistencies.

In many cases it may be necessary to include document “hierarchy” or “order of preference” clauses into the contracts to ensure that the partnering intentions and priorities are safeguarded. Qualified legal advice should always be taken for each particular situation.

## **CONCLUSIONS**

When it comes to the adoption of strategically motivated supply structures, study after study has pointed to the blindingly obvious: for integration to bring real, lasting benefits it must be enacted throughout the supply chain – from the Big Pharma shipper client at one end of the spectrum to the smallest service provider at the other.

It is simply not enough to integrate the upper tiers of the supply chain and then rely on good old-fashioned adversarial combat to painfully squeeze the necessary cost savings, efficiencies, regulatory

compliance, safe working practices etc. out of the remaining parties. This “asymmetric partnering” is actually counter-productive in practice. Cosy supply chain “partners” with hugely inflated buying power seem almost genetically programmed to use this power in a less than constructive way i.e. by using it to reinforce the status quo of exerting adversarial pressure down the supply line.

The real opportunity with integration rests in the creation of stable delivery mechanisms that harmonise the entire supply chain, especially its physically remote, breach of the terms of the NPA, highly fragmented and culturally alienated transportation, product and system sectors. Only by permanently escaping their ingrained silo-mentalities can these parties hope to capitalise on greater mutual understanding. For this to happen, Big Pharma shippers have to make an up-front commitment and take the lead.

It can be done. Genuinely symbiotic relationships allow integrated networks to focus on their core activities – what they do best – and leverage the capabilities of their collaborative partners. Car makers, for example, by adopting an integrated approach to their supply chains have succeeded in reducing their concept-to-production cycle during the last three decades from something like six years to just 14 months. Clothing manufacturers have done the same: in this case one manufacturer has succeeded in achieving a design-to-shelf time in as little as 10 days! Meanwhile online retailers are achieving reliable, same-day home deliveries with full order tracking.

By operating as an integrated network, a pharma manufacturer will be able to pull innovation through the supply chain to enhance customer responsiveness, accelerate time to market, and assimilate new technologies. This, in turn, will lead to enhanced customer satisfaction and loyalty, improved margins and a higher return for shareholders.

Supply chain integration is a journey not a destination. The transition to a new business model is never easy. But in the long-run it will prove much less painful than trying to continuously adapt the status quo to a whole new paradigm of business.

## **FROM RHETORIC TO REALITY – AN EXAMPLE OF AN INTEGRATED COLD CHAIN**

Notwithstanding its exceptional regulatory oversight, the pharma-logistics sector remains beset by an unacceptable levels of pharma impairment and loss during transportation mainly due to poor temperature management.

### **Poseidon**

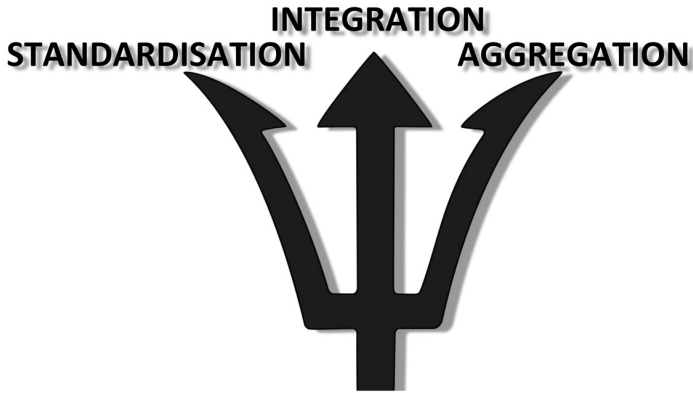
The Poseidon program (<https://www.poseidon.team>) is an industry reform initiative conceived to address the issue of poor temperature management during transportation by promoting the case for a modal switch from air freight to ocean freight. Ocean freight has been shown to be the most reliable, stable, economic and sustainable stable mode of delivery for pharmaceuticals.

### **Purpose and objectives**

The principal aim of Poseidon is one of significantly improving the quality and reliability of pharma freight by sea and it is achieving this through, inter alia, the application of proven best-practice supply chain principles and procedures. It has been developed around the doctrine of multi-party collaboration and supply-chain integration and built on a foundation of win-win team-work, supply-chain discipline, shared risk, mutual strategic targets, focused effort, transparency and continuous improvement.

In particular, Poseidon sees scope to:

- Develop ocean freight as the “default” long-haul shipping mode for a larger proportion of pharma products.
- Standardise and streamline the pharma ocean- freight process wherever possible.
- Combine the freight volumes/buying power of multiple shippers for lower cost and reduced carbon footprint.

**Figure 5 “Three Points of Poseidon”**

The “Three Points of Poseidon” symbolise the integration model

Figure Courtesy of the Alan Kennedy, All Rights reserved

- Improve the safety and security of sensitive drugs during transit.
- Develop a safe, flexible, GDP-compliant Less Container Load (URL LCL) service for pharma.

### **The Poseidon business model**

If the Poseidon philosophy were to be encapsulated in just three-words, these might be “integration”, “aggregation” and “standardisation”. By combining these three elements, together with everything they represent, a model is created that engenders teamwork and transparency, provides economies of scale and brings much more certainty and predictability to the cold chain process.

Quite simply, by bringing the best supply chain shippers, carriers and suppliers together and by substituting a win-win environment for zero-sum behaviour, the conditions are created for supply chain optimisation as well as market differentiation, realistic margins, and security of business for carriers and suppliers. Poseidon also has a goal of bringing pharma shippers together in order to combine freight for significant consolidated shipping volumes. At the end of the day, freight prices are driven by the supply and demand for capacity so by providing a compliant means of

aggregating consignments from multiple shippers, Poseidon opens the doors to a new freight paradigm.

## **Structure**

Essentially Poseidon is an organised network of pharma shippers and specialist suppliers which, between them, constitute the complete logistical cold chain for pharma. All constituent parties, from the pharma manufacturers at one end, to the logistics providers in the middle, to the product suppliers at the other end, are pulling together to achieve pre-defined, common goals.

The Poseidon network also extends to other critical players in the supply chain such as insurers and port authorities and all of these parties are committed to working in an integrated manner as part of a one-team culture and to bringing their particular expertise to the table. This approach is called “structured collaboration” and, done correctly, brings numerous advantages to the participant organisations.

## **Benefits**

The environment that results is one that naturally engenders continuous improvement in terms of innovation, efficiency, quality and compliance.

For example, in the case of Poseidon, quality control goes much further than simply requiring the participant organisations to enlist for industry certifications and comply with minimum legal standards. With the Poseidon approach, quality and performance are driven by a much stronger force than either of these and one that can't be circumvented, at least for long.

This is the self-activating quality assurance that derives from the power of “mutual oversight and collective coercion”. If the success of the individual company is dependent on the success of the overall group you can be sure that there is overwhelming peer pressure for organisations to perform and comply.

In this scenario you reach a point where no party wants to let the network down and, ultimately, where no-one can afford to lose the business they enjoy as a member of an elite network. The mutual visibility of each party in the network party means that underperformers cannot hide and yet, at the same time reasonable / unforeseeable etc. problems and changes of circumstance are covered by a culture of “no-blame” and “collective responsibility”.

Poseidon works because it is built around interdependency and trusting collaborative relationships between a group of culturally-aligned organisation operating in a closely integrated environment. It may be a different way of thinking and a different way of working but it doesn't stray far from basic human instincts. Done correctly it can bring enormous benefits, including a huge competitive advantage for those that can get it right.

## **Poseidon network communications**

Poseidon network communications take place through a cloud-based Poseidon Collaboration Hub which permits secure communications etc. on a 24-7 basis between the participant organisations wherever they may be in the world. The Collaboration Hub facilitates network communications / virtual meetings, the exchange of ideas, the dissemination of news, the sharing of information and the managing of projects.

## **Operation and control**

Poseidon is organised on a triple tiered basis with day-to-day matters in the hands of a core “neutral network trustee” (NNT) and strategic matters under the auspices of the “Poseidon Steering Committee” which, in turn, is answerable to the Poseidon Management Group on which all participating companies are democratically represented.

From a “rules of engagement” perspective, apart from anti-trust and confidentiality provisions, Poseidon partners are subject to just a single basic control document: The Poseidon Partner Agreement

(PPA). The PPA is an overarching “umbrella” agreement that articulates the essential relational rules, principles and commitments that are necessary for the creation, continuance and control of a strong, stable network; one that is deemed fair, reliable, transparent, principled and trusting. It includes provisions, *inter alia*, for decision-making, communications, confidentiality, IP matters, dispute resolution, network management etc.

Sitting alongside the PPA is the Poseidon Competition / Anti-Trust Policy which all participants are subject to as a condition of entry.

## **SUMMARY**

Poseidon represents a radical new approach to pharma-logistics, one that harnesses the respective strengths of the different supply chain stakeholders to create a special synergy where the whole that is greater than the sum of its parts. By working together as a team with a common set of goals and objectives for the mutual benefit of everyone, great things are possible. In the space of a few months the Poseidon model has captured the imagination of the industry and is “making waves” in terms of changing perceptions as to what is possible when companies chose to work in harmony around managed strategic partnerships.

By bringing the shippers around the table with all the other supply chain stakeholders, by eliminating the historic silos that thwart transparency and trust, by fostering shared responsibility and by creating a collaboration-friendly environment, the Poseidon model is driving an optimised, value-added approach to the pharma supply chain. Integration at its best.

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## ABOUT THE AUTHOR

**Alan Kennedy** is a specialist in supply chain dynamics who, with his extensive cross-sector experience, is focused on bringing best-collaboration practice to pharma-logistics. He is the founder and Executive Director of Pharma TEAM-UP, a non-profit initiative with the goal of fostering closer supply chain integration and he is one of the principal architects behind the Poseidon program, a new logistics delivery model that has been conceived to radically transform the transportation of pharmaceutical products by sea. This is



being achieved through the application of contemporary supply chain best-practice and structured, multi-party collaboration. He regularly presents on this topic and has authored numerous papers.

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