Virtual Business Networks

Expert knowledge means success

Contents

Introduction[1]

Virtual Business Networks seem to be the hot topic at the minute - everybody is talking about virtual business collaboration, clusters and networks.

Here, Virtual Business Network (or VBN) means *"companies coming together to co-operate to achieve some shared business goal by forming networks enabled by various forms of internet-based technology"*.

VBNs are appearing everywhere and in many guises and names such as *Collaborative Networks, Virtual Clusters, Virtual Enterprise Networks, Collaborative Supply Chains, Networked Enterprises* and *Star Alliances* to name just a few.

But how does a business leader or a government policy-maker make sense of them all? Are all VBNs the same or do they have significant differences? Are they all equally likely to succeed? Do different types of VBN produce different returns and demand different levels of commitment?

This publication provides a practical taxonomy of modern virtual business networks. It identifies and defines eight distinct types of VBN and also provides real-life up-to-date examples of each VBN type to enable better understanding and provide a start-point for further investigation.

These eight types are not based on an academic framework but rather a practical classification of the different kinds of VBNs which are actually happening today:

- CSC - Collaborative Supply Chain
- CSN - Collaborative Supplier Network
- CPDN - Collaborative Product Development Network
- ETA - Enhanced Trade Association
- IAN - Incubation & Acceleration Network
- SPX - Subcontracting & Partnership Exchange
- TLE - Technology-Led Ecosystem
- VEN - Virtual Enterprise Network

This taxonomy of virtual business networks

will enable:

- Leaders of small businesses to identify which type of VBN can best accelerate their ambitions for growth through virtual collaboration
- Leaders of large enterprises to explore more effective forms of VBN-based working with smaller suppliers than traditional supply chains
- Government policy-makers to establish which types of VBN might be worth evaluating and including in their strategies to enhance regional economic competitiveness and where they can look globally for the best case studies and exemplars

In this publication we also look in more detail at one type of VBN, the Virtual Enterprise Network (VEN), defined as *"A group of companies who operate as a collective with the objective of winning collaborative business contracts."*

Virtual Business Networks are everywhere

We see a proliferation of virtual business networks around a number of common themes:

- Business-Business Cooperation
- Enhancing Business Scale
- Mutual Business Benefit Focus
- Internet Technology-Enabled

The terminology varies widely with labels such as:

- Collaborative Network
- Virtual Cluster
- Networked Incubator
- Virtual Enterprise Network
- Collaborative Supply Chain
- Concurrent Enterprise
- Agile Virtual Enterprise
- Collaborative R&D Network
- Networked Enterprise
- Subcontracting and Partnership Exchange
- Star Alliance

Many of these labels are used interchangeably and it can all be very confusing if you try to compare two VBNs - it's the classic apples and oranges problem. However, as well as being difficult and

frustrating it can also be very costly!

Lack of a good basis for comparison of the key features of VBNs can result in a business joining the wrong kind of network or government policy-makers using the wrong VBN cases on which to build long-term regional economic development strategy.

But before we look at the differences between VBNs we should look at where all this interest in virtual business networks is coming from.

The Drivers of Virtual Business Networks

There are two main drivers of virtual business networking activity - Individual Company Activities and Regional Competitiveness Agendas.

Individual Company Activities

Companies typically join virtual business networks for a number of different business-related reasons.

Most commonly this reduces to three broad areas - increased sales, enhanced innovation and reduced costs:

Increased Sales

- Collective marketing (sharing a common brand)
- Collective bidding (wider product offering)
- New Channels to Market (for existing products)

Enhanced Innovation

- New product development (shared knowledge)
- Improved efficiency and products (best practice)
- Access to university R&D (technology transfer)

Reduced Costs

- Sharing a resource (capacity, people)
- Sharing a service (training, marketing)
- Joint procurement (materials and services)

Regional Competitiveness Agendas

The development of networking and

clustering schemes is also a major priority for a number of highly competitive regions globally.

These schemes usually involve some combination of:

- Fostering and supporting collaboration among SMEs
- Building linkages between the SMEs and global players
- Developing and strengthening their knowledge-based sectors
- Seeking to use and develop new technology to support all forms of collaboration
- Enhancing International trading and reputation of companies and regions
- Seeking sustainable mechanisms to take beyond the incubation and piloting phases

Some regions have developed substantial VBN programmes, such as Denmark, Switzerland and parts of the US.

In other areas, such as the UK there are ambitious VBN programmes which have only been running for a couple of years.

Other regions have formulated ambitious VBN policies and plans (e.g. Republic of Ireland) but have not yet started major implementation.

Key Differentiators of different types of Virtual Business Network

There are some major characteristics which differentiate a VBN:

Topology

Are they based around a single large central player (i.e. a star) or not?

In other words is it a "many to one" VBN or a "many to many" VBN?

There are big advantages in having a major central player (e.g. resources and money) and big disadvantages (e.g. balance of power and over-dependency).

Primary Objective

What is the primary purpose of the collaboration? For example:

- Skills Development
- Government Policy Lobbying for a sector
- Collective Sales & Marketing
- Collaborative Product Development

The Level of Cooperation

There are typically three levels of Co-operation in VBNs:

- Light (Communicating) - exchange of external information often through organising events and external speakers
- Medium (Co-ordinating) - sharing of internal knowledge on organisational best practice and common problem solving
- High (Collaboration) - commitment to co-invention and risk/reward such as making collective bids

The higher the cooperation the more significant will be the likely returns.

However, significantly more commitment and input will also be needed from the VBN members to achieve these returns.

Participants need to balance what they want out of a VBN with what they are prepared to put in and in many cases they are only prepared for light co-operation.

VBN Longevity

Is the VBN on-going (usually funded through membership fees or government support)? Or has it been formed for a very specific purpose and lives for just 6-18 months and then dissolves?

Legal Formality

The legal formality needs to be appropriate to the level of risk and reward the members are taking in cooperating together and usually evolves over time - provided the co-operation is fruitful.

Too much formality at the start of a VBN can distract and inject a dynamic of distrust into a VBN which will kill its chance of entrepreneurial success before it even starts.

On the other hand no formal agreements leave a VBN and its members open to abuse The different options include:

- Loose co-operations with no legal basis
- Semi-Formal with Non-Disclosure Agreements and Ground Rules
- Multiple bilateral legal agreements between each VBN member ("many too many" like a joint venture)
- Single "virtual business network agreements" which all members must sign up to as a condition of joining the VBN ("many to one")

The VBN Taxonomy

This taxonomy of virtual business networks (VBNs) should help you to make sense of all the new forms of virtual business network which are emerging.

It should be used with discretion and common sense as all networks won't fit into a single type. For example The Stac (Scotland) has elements of both the CPDN and CSC types of VBN.

However this Virtual Business Network taxonomy should allow:

- Leaders of small businesses to identify new ways to accelerate their ambitions for growth through network cooperation
- Leaders of large enterprises to explore more effective forms of working with their suppliers and other partners
- Government policy-makers to enhance their strategies for clustering to improve regional competitiveness

Ken Thompson, the creator of this taxonomy, invites virtual business network practitioners to collaborate with him in extending this initial VBN taxonomy. The only condition is that any new VBNs are real networks (not concepts!) with live case studies to back them up! His contact details can be found at the end of this publication.

CSC - Collaborative Supply Chain

Definition: A supply chain, around a major player, but which seeks to operate much more collaboratively than traditional supply chains.

Examples:
Virtual Agility Movement (US)
The Agile Virtual Enterprise (Ted Goranson, 1999)

In the US there has been a significant movement within the large contractors in the defence and advanced engineering sectors (e.g. automobile and aerospace) to develop more agile supply chains by working differently with their suppliers.

Agility is defined as "the ability to respond to unexpected change"

CSN - Collaborative Supplier Network

Definition: A group of suppliers who present a common public identity and address areas of common concern such as training and business development.

Examples:
The Danish Networking Programme
"Networks of Innovation" Report, Forfás
Ireland 2004

In 1989 a government-funded report declared that prospects for the Danish economy were bleak, "size is the problem." The Danish economy consisted of a large number of small firms (with 10 to 30 employees) which were too small, too dependent and too diversified to compete in an increasingly global market.

In March 1989, the Danish Ministry of Trade and Industry announced its "Strategy '92" which included a Network Plan aimed at creating business networks among small enterprises. Within a year of its launch, the Network Plan had more than 1,500 firms operating in networks. EU Cooperative Research (CRAFT)

Supply Network Shannon (SNS)

An open network of companies in the Shannon Region, which was established in 1998 representing companies in the Shannon region of Ireland. SNS aims to promote, develop and market sub-supply capability in the Region.

CPDN - Collaborative Product Development Network

Definition: A group of companies who are collaborating on new product development, new channels to market or applied research and development.

Example:
EU Cooperative Research (CRAFT)

CRAFT Proposals must be collaborative, involving companies from at least 3 EU member states, SME oriented and technology focused. Projects run for a minimum of one

year and a maximum of two years. Each project should cost between €0.5 and €2 million. There have already been around 200 CRAFT projects completed. The third call was published in December and closed 14 September 2005. Budget was €75 M. Consortia must also include at least two RTD (Research & Technology Development) performers, which are organisations with the facilities necessary to carry out research on behalf of the SMEs.

ETA - Enhanced Trade Association

Definition: A Trade Association which extends its traditional activities into networks and cluster development

Example:
Atlantic Technology Corridor (Ireland)

The cluster comprises 272 companies focused on Information, Communications and Technology companies (ICT) / Medical Technology companies in the West of Ireland.

IAN - Incubation & Acceleration Network

Definition: A network organisation which supports technology business start-ups

Examples:
Networked Incubators (US)
"Networked Incubators: Hothouses of the New Economy" Harvard Business Review, September-October 2000.

Professor Donald Sull and his colleagues at the Harvard Business School have suggested that a new type of incubator, called a networked incubator, represents a fundamentally new and enduring organizational model uniquely suited to growing businesses in the Internet economy. It shares certain features with other incubators — such as fostering a spirit of entrepreneurship and economies of scale. But its key distinguishing feature is its ability to give start-ups preferential access to a network of potential partners.

Network for Satellite Navigation, Oberpfaffenhofen, Germany

Following the decision of the European Union to develop the satellite based navigation system GALILEO, the Bavarian State focused on establishing the region west of Munich (Oberpfaffenhofen) as the leading centre for applications of satellite navigation in Europe.

SPX - Subcontracting & Partnership Exchange

Definition: An electronic mechanism for connecting (small) suppliers with (major) buyers.

Examples:
Subcontracting & Partnership Exchanges (UNIDO)

Subcontracting and Partnership Exchanges (SPX) are aimed at the developing nations and are organized as non-profit industrial associations run by qualified entrepreneurs. They operate as technical information, promotion and match making centres for industrial subcontracting and partnership between main-contractors, suppliers and subcontractors. The objective is to optimise utilization of the manufacturing capacities of the participating companies and industries. Results produced by an SPX after a three year take-off period are impressive - especially given the fact they are located in developing economies, typically:

- 50-100 national contracts concluded per year worth €5.5M-8.7M
- 25-50 international contracts concluded per year worth €2.7M-5.5M

West Midlands Collaborative Commerce Marketplace (UK)
WMCCM aims to increase sales and lower costs through providing easy access to the core competences and capabilities of SMEs. It provides tools such as projects, clusters, catalogues, auctions, bazaars and marketplace tenders.

TLE - Technology-Led Ecosystem

Definition: A network which seeks to exploit the business opportunities offered by a new and emerging enabling technology

Example:
Wireless Leiden, Leiden, Netherlands

Wireless Leiden is the network of professionals and companies behind the largest wireless hotspot or community network in Europe covering the whole city of Leiden and the surrounding villages. Also new applications, such as location based services; messaging and voice over IP applications are possible within the network.

VEN - Virtual Enterprise Network

Definition: A group of companies who operate as a collective with the objective of winning collaborative business contracts.

Examples:
Virtuelle Fabrik (Virtual Factory), Switzerland

"Virtuelle Fabrik Nordwestschweiz-Mittelland" is four networks each of about 40 SMEs, which was formed in 1997 with the expectation of being able to realize competitive advantages when co-operating.

Yorkshire Forward VEN Programme (UK)

Focuses on specific industry areas such as Healthcare, Engineering, IT/Digital, Chemicals/Bioscience

Virtual Enterprise Networks

Traditionally many small businesses join supply chains centred on larger companies. Unfortunately the companies at the bottom of such supply chains are often treated as commodity players and replaced with cheaper alternatives when the opportunity arises.

Some brave small businesses have attempted to "go it alone" by creating sophisticated internet e-business architectures which directly link them to their major customers and partners. However the expense, risk and sheer management effort involved in this approach puts it beyond the reach of most.

The "third way" which companies are discovering is to join "Virtual Enterprise Networks" or VENs with other like-minded but complementary businesses to market, sell and deliver collective offers to the market beyond what the individual companies could offer by themselves.

In addition these VENs are also undertaking significant collaborative product development work, often in partnership with applied research institutes and universities, which would be beyond the reach of the member companies individually.

For example, a group of UK Engineering companies are using the VEN approach to collectively bid for many-million pounds of work per annum from a large European

What do we mean by "Virtual" Enterprise Network?

"Virtual" has three distinct and complementary meanings in a VEN:

- Virtual - as the opposite of Physical, new (non-physical) enterprises forming and dissolving from other (physical) enterprises, each with different processes, systems and cultures, with the need to build trust, common aims and working practices very quickly.
- Virtual - as not geographically in the same place, with the use of virtual team technologies and techniques to address this.
- Virtual Capacity - in the sense of "Virtual Memory", where a computer operates as if it has more capacity than it actually has, allowing enterprises to incorporate external skills and resources to exploit market opportunities.

Customer. Like many corporates this customer has a supply chain rationalisation (aka small supplier reduction) programme which would stop them dealing with any of the companies individually.

Another example is a group of Swiss component manufacturers who used VENs to move up the value chain away from contract-specific components to branded product solutions in the face of stern cost-based competition from Czechoslovakian companies exporting into their home market.

A third example is a group of Mexican manufacturers who used a VEN to support their entry into a new, more sophisticated market (the US).

Why join a VEN?

The goal of a Virtual Enterprise Network is to connect Small and Medium Enterprises (SMEs) into peer networks, supported by appropriate collaboration practices and technologies, to give them the capabilities and competitive advantages of large global enterprises, particularly in:

- Sales
- Marketing Reach
- Product Development
- Human Capital and IT Capital

Moreover, an overarching goal of a VEN is to achieve these capabilities while retaining the VEN's inherent competitive advantages over large enterprises in:

- Speed and Responsiveness
- Entrepreneurship and Innovation
- Flexibility
- Low Overheads

A VEN is, therefore, a way for businesses to achieve virtual scale, enabling it to operate as if it possesses more resources and capacity than it actually has within its own physical organizations. This allows the VEN to function with all the resources and reach of a large enterprise, but without sacrificing its speed, agility and low overhead. This enables it to compete for bigger, more profitable contracts with higher innovation and design elements, with bigger customers that are more willing to build strategic partnerships rather than simple transactional relationships with the VEN's individual suppliers.

The critical factors for making a VEN a success

Not over-complicating the technology support

The surprising thing about virtual enterprise networks is that the technology support companies need to get started and win collective new business is neither complex nor costly.

When companies are starting to collaborate all they really need is a simple web-based collaboration platform which they can access from their companies (whilst travelling) which allows them to securely communicate, schedule, discuss and work on shared documents.

Typically numerous suppliers offer such software as a hosted, pay-per-use service, which requires no software, installed at any of the client PCs.

Companies operating in a network also need access to good shared business applications such as campaign management/CRM - these applications must be web-based as networks of small companies do not have shared IT infrastructures.

Taking "Network Governance" Seriously

The biggest concern a customer will have in dealing with a network is who is accountable when things go wrong (and can I sue them if it has to come to that!).

Also customers want to treat the network like a single entity not like a collection of different companies. Thus they need to see single point of contact, seamless business processes and common values from a network.

This can all be grouped together under the term "Network Governance".

Networks, which do not invest in building this typically unravel in their first sales pitch to any large customer once the customers procurement department starts asking probing questions.

"Marriage of Convenience networks" rarely win collective contract work from major organisations.

Development of Common Collaborative Working Practices

A virtual enterprise network is a virtual team. However it is made up of individuals from many different organisations with different ambitions, IT awareness, business cultures many of whom do not know each other well.

It is therefore a classic Virtually Networked Team and as such needs to agree the way these people will work together, make decisions, handle conflicts, share information and use the virtual collaboration technology.

An aspect of VENs which seem to differentiate them from other forms of networking is the willingness of the members to invest in the development of these shared working practices.

Without such practices it is unlikely that trust will grow in the network to the extent necessary to achieve anything significant. The first conflict that happens will probably destroy the network.

Strange as it may seem it is sometimes the appearance of the first good business opportunity that destroys a network as members revert to non-collaborative styles with the smell of the money!

"ABC" Roles

The most successful virtual enterprise networks are based around 3 key roles, which can be remembered using "ABC".

"A" is for the Architect who knows what the network of companies can (and cannot) deliver. The Architect is also responsible for finding companies to fill gaps in the virtual supply networks needed to deliver specific customer opportunities.

"B" is for the Broker who sources potential customer opportunities for the network and then works closely with the Architect to qualify them and configure the right virtual teams to bid.

"C" is for the Coach who works with the individuals in the different companies to build trust, design accountability structures, resolve issues, address conflicts of interest and build them into effective cross-company teams.

Ten questions for assessing a VEN

A key differentiator of VENs from other types of business network is that the member companies have made real and serious investments in creating a collaborative network enterprise and all this implies.

Despite what a network might call itself many business networks are little more than loose associations of companies who barely know each other and have not invested in learning to collaborate together.

These kind of opportunistic business networks believe that when they win the first customer contract that will be time enough to learn to collaborate.

In the real world however this is not something that discerning and demanding customer organisations are likely to give them the chance to prove!

It is important therefore that if you are a prospective customer of a VEN or you are a small business thinking of joining a VEN to have a way to check-out how serious a collaborative enterprise such a network is.

- 1. Network Mobilisation
  Has the network completed a formal network mobilisation process to align member goals, inputs and expectations?

- 2. Management Resources
  Does the network have dedicated network management resources in the key areas of overall network leadership and administration/technology support?

- 3. Ground Rules
  Has the network agreed Ground Rules which all members must observe to ensure the interests of all members are fairly and transparently governed?

- 4. Broker & Sales Plan
  Is there a dedicated Broker responsible for identifying sales opportunities for the network in line with an agreed business development plan?

- 5. Capability Map
  Have the companies aggregated and analysed their capabilities to identify core/quick win areas and gaps where new members may needed?

- 6. Tenderfeeds
  Does the network have access to regular tender information backed up by a systematic process for qualifying and processing opportunities?

- **7. Affiliate Management**
  Does the network have a process for managing new and affiliate companies to ensure they are properly considered for bids and have good regular information which keeps them informed about network activities and opportunities?

- **8. Innovation & Alliances Plan**
  Does the network have a committed strategy and plan for collaborative product development (generally involving an applied research group/project funding), external product sourcing and the formation of useful alliances with other networks?

- **9. Common Processes**
  Does the network have common and regularly updated processes covering the execution, management and reporting/liaison of internal and customer-facing projects?

- **10. Collaborative Legal Agreements**
  Has the network developed detailed legal agreements to underpin collaborative working in key areas such as Intellectual Property, non-performance and risk/rewards?

Analysing the VEN's responses

If a network can answer 'Yes' supported by evidence for five or more of these questions then there is a good chance that they are serious about operating as a collaborative network.

If the network can say 'Yes' to seven or more then you probably have found a very strong network you can work with.

If the network can only say 'Yes' to a couple of the questions then you have a network which probably should be avoided for one of two very different reasons:

- a network in its early stages which needs more time to develop or

- a **'network of convenience'** which is unlikely to be a good strategic partner.

Useful Links

The Virtual Business Network website

Some businesses may prefer to create their own business network for their specialism or industry. There are organisations online that can help you to set up your own e-community, using their contacts and technical expertise.

For more information visit
http://www.vbnonline.com/

Clusters

Clusters are geographically close, interconnected companies and specialised suppliers within certain fields that work and co-operate with each other as well as being competitors.

Most Regional Development Agencies[2] have a cluster strategy and aim to attract specific industries to their areas, sometimes for reasons of history, but often because new opportunities have been identified.

Support for these clusters includes helping companies access a skilled workforce, quality universities, good sites and investment capital. Growth in these clusters also attracts suitable suppliers and even customers to the area.

For more information contact your Regional Development Agency or visit
http://www.bis.gov.uk/policies/economic-development/englands-regional-development-agencies

Science Parks

A Science Park brings together a group of knowledge-based businesses, along with support and advice to help the businesses grow. While the support each Science Park offers varies, typical services include help with premises, technology expertise and business services that can range from advice on intellectual property to security and cleaning facilities.

Supported through a variety of local, regional, national and European Union funds, the structure of Science Parks can vary and there is no common formula for ownership. Universities, local authorities, private companies and property developers can all be involved in different ways and to different levels.

The UK now has over 100 Science Parks. 'Science Park' is the umbrella term used for research parks, technology parks, incubators, innovation centres and technoparks. Different types of Science Park have different aims, for instance:

- an incubator supports new businesses during their early years

- some Science Parks specialise in a particular industry, such as biotechnology or information technology

- a research park may only allow research and development businesses on it.

Science Parks have formal and operational links with centres of knowledge creation, such as universities, in areas such as technology transfer, sourcing venture capital, student placements and marketing assistance. For example, businesses in the Science Park can tap into a university's resources and may be able to commercially exploit research being carried out there.

For more information visit:
http://www.ukspa.org.uk

Knowledge Transfer Support

The government offers three Solutions for Business products to help business in England benefit from the knowledge and expertise of other companies and academic institutions:

* Networking for Innovation
* Innovation Vouchers
* Knowledge Transfer Partnerships

Networking for Innovation

This is aimed at businesses with specific technical or scientific research and development requirements, which may be eligible for a grant to establish a network through which to share information. The wider business community benefits by being able to access all the knowledge, information and contacts the networks gather.

For more information about Networking for Innovation opportunities in your region contact your local Business Link Helpline on Tel 0845 600 9 006.

Innovation Vouchers

These enable small and medium-sized businesses in England to buy support from an academic institution in order to explore potential opportunities for future collaboration in developing new products, service and processes.

Benefits for businesses include:

* ease of access and wide reach to academic institutions
* shared financial and technological risk during research and development activities
* new skills and knowledge retained in businesses
* improved business ability to exploit ideas

For more information on how Innovation Vouchers could help you, contact the Business Link Helpline on Tel 0845 600 9 006.

Knowledge Transfer Partnerships

These enable businesses to benefit from the expertise of organisations like further education colleges, universities or research institutes. Recently qualified people at NVQ level 4 or above are recruited to work in the business as a Knowledge Transfer Partnership Associate. Projects last between one and three years, and address product design, manufacturing, product or management processes, computing or management information.

For more information visit:
http://www.ktponline.org.uk/business/business.aspx

Ask for our publication on Knowledge Transfer Partnerships:
176-Knowledge Transfer Partnerships

Further Information

This guide is for general interest - it is always essential to take advice on specific issues.

We believe that the facts are correct as at the date of publication, but there may be certain errors and omissions for which we cannot be responsible.

Acknowledgement and References

[1]With the exception of the Useful Links section, all of the information in this publication was provided by Ken Thompson of Redburn Consulting Ltd. Ken is recognized as a leading expert in the emerging area of Virtual Enterprise Networks and has successfully incubated a number of these networks in the UK and Ireland. Ken also helps distributed business teams in medium and large-sized organizations become successful through a unique approach to team design and workflow. His strategy includes the use of key sets of team dynamics, multiple coaching interventions and the effective integration of a small toolkit of virtual collaboration technologies. http://www.bioteams.com. Information on VENs is available at www.bioteams.com/virtual_collaboration_networks and information on his book *The Networked Enterprise* is available from Amazon.com and Amazon.co.uk.
Ken can be contacted by e-mail at ken.thompson@redburnconsulting.com

[2] The Government announced the abolition of the nine Regional Development Agencies (RDAs) in England – eight regional agencies through the Public Bodies Bill and the London Development Agency through the Localism Bill - on 22 June 2010. The eight RDAs will cease operations by April 2012, with formal closure and final accounts delivered later in the summer, along with the final abolition order under the Public Bodies Act. The London Development Agency (LDA) is expected to cease operations by March 2012. It is intended that all LDA assets and liabilities will be transferred to the Greater London Authority (GLA) before the LDA closes. This will give the GLA an important portfolio of regeneration assets to support its new responsibilities for housing and regeneration in London which are being implemented in the Localism Bill. RDA assets and liabilities outside London that have not been disposed of by March 2012 will be transferred to BIS. See: http://www.bis.gov.uk/policies/economic-development/englands-regional-development-agencies