NTD International A/S : SME case 08

NTD International A/S - North Sea Technology Development.

(Former Fa. W. Meinerts Olsen)
This case illustrates how a new enterprise was built by splitting up a traditional shipyard business into the material and the immaterial processes concentrating on the knowledge based parts by extensive use of IT and telecommunication. As a result the enterprise operates world wide instead of locally involved in considerably more projects.

1. Name of Company

NTD International A/S - North Sea Technology Development.
The company consists of three different enterprises: The virtual shipyard, the engineering company delivering winch solutions and the ship power installation company.

2. Function of Company, i.e. what business are they in?

NTD define themselves as a virtual shipyard, which means that NTD do anything in shipbuilding but weld the ships together.
NTD contract all phases of shipbuilding: contract negotiations, pre-qualifications, design, drawing and construction by means of CAD, 3D-modelling etc., whereas shipbuilders all over the world undertake the actual production.
Power installation is primarily knowledge based design and delivery of components installed by of subcontractors.
The engineering company deliver heavy-duty winch solutions.
Currently NTD is operating in Norway, UK, Germany, the former East Germany, Latvia, Croatia, Singapore, Bangkok and Vietnam.
Based on 20 years of experience in the ship building sector the basic idea of NTD is to deliver knowledge based maritime products avoiding to 're-inventing the wheel'.

3. Distinctiveness of the Case, i.e. why was this case selected?

NTD was initially selected because it started off as a true virtual enterprise with a few people. In a few months however the enterprise grew from 2 to 22 employees and changed from being a virtual enterprise to becoming a teleworking and mobile SME.

4. Description of the initiative

NTD build on the remaining of a traditional shipyard. The Former company W. Meinertz Olesen & Co A/S, which is the base of NTD, went bankrupt due to the fact that that one of its two customers went bankrupt, primarily due to bad management. The board was without visions and a future perspective and ignoring signals of structural changes.
An initiative was taken to continue what was considered to be the most profitable part of the business in the form of NTD. NTD was set-up to handle all the initial processes and work associated with starting a ship building project, design and construction processes, supplemented by some specialised products and services - winches and ship power supply.
The original virtual enterprise only operated as a virtual enterprise for a short time because of fast success and the derived need for employing a larger number of people in one place. Much of the staff was recruited from staff of the former company already living in the area supplemented with new staff from outside the location. Three persons are permanently stationed in other harbour cities, i.e., one in Århus - 120 km away, one in Esbjerg - 80 km away and one temporarily in Croatia.
Around fifty percent of the staff work alternately from office, home or where ever necessary. The exception is the workshop bound personnel. The majority of the staff work under an agreement about job-salary, i.e., paid for the job rather than on an hourly basis. 'Job-wage' is an inherent condition in the project-oriented business and has never been subject to discussion. Decision about the permission to work from home is based on a distinction between who can manage their own work and who cannot. There is no explicit management

of teleworkers. The only requirement is that teleworkers are reachable by phone during normal working hours.
Teleworking and flexible working is ad hoc and informal, except - for taxation reasons - the declaration of the place of work. Formal contracts about telework have never been discussed. Reasons are that the nature of the shipyard business is highly project oriented and the working culture of the western part of Denmark is less formal. Flexi-working employees control their own time. Working hours follow the demand. In busy periods employees work many hours - including weekends - while in periods with low workload it is accepted to work less that normal hours.
Most of the staff is male between 30 and 50+. Flexi-work jobs are construction, drawing, designing, accounting, correspondence and similar tasks. All expenses are paid by NTD except the rent of space occupied by IT-equipment.
NTD exploits a wide range of IT: CAD workstations, plotters, colour laser printers, scanners. Internet, e-mail, telephony and satellite communications play an important role for communication as well as transfer of 3D illustrations and CAD-files.
High performance workstations are mainly placed on the company premises. All staff that works flexibly has mobile phones and portable PCs. Security is catered for by means of firewall, dial-back and password protection.

5. Changes: what changes, if any have taken place since the scheme started?

The most significant change was experienced in the technical area, i.e., the development in IT employment. Examples are Intranet and dedicated purpose servers, high performance workstations, employment of satellite phones.
Attitudes towards employment of external labour have also changed, for example employment of external experts, and future part time contract workers are considered realistic options.

6. Innovative aspects of the initiative

In the traditional shipyard orders and materials are brought to the place where the knowledge is located. The virtual shipyard brings knowledge and services to the customers and to physical building places. There is no inherent need to maintain and operate the immaterial processes and the material processes in one and same enterprise and location. On the contrary, it seems that there is a clear competitive advantage in concentrating on the knowledge-intensive immaterial processes, to offer beneficial work-partitions that qualify - and share the economy with - capable physical shipbuilding enterprises all over the world. In practice NTD are involved in shipbuilding projects at a scale probably an order of magnitude greater than what would be feasible in the traditional shipyard located in Western Jutland.

7. Benefits of the initiative

According to the managing director of NTD the company could not exist without tele- and flexi-work. The idea of this special enterprise is to meet the changes and challenges in the wharf industry - an extremely fluctuating industry. IT and flexible working enable the necessary competitiveness. A very important aspect is the ability to work more from the customer's premises yielding a much higher efficiency.
The internationalised conditions for the ship industry was recently described in a report - "The Blue Denmark", from the Danish Maritime Authority - Søfartsstyrelsen:

> »A Danish ship owner has a ship built in China equipped with a Danish-designed main engine built under licence in South Korea. Other equipment comes from Denmark, Norway, Germany and 20 other countries. The vessel is partly designed and constructed by a Danish naval architect and consultant company and will be inspected in China by an English classification company and the Søfartsstyrelsen, as it will sail under Danish flag. The crew will be Danish officers and Philippines on deck. The ship will be insured in Denmark except for the third party insurance taken out in Norway. The vessel will operate between harbours in North America and South America. Spare parts will be supplied by a Danish ship-chandler, and the paints are supplied from a Danish company with a factory in Southeast Asia.
> The cargo owners are situated all over the world, but the cargo is insured in U.S. Besides following the international rules and the special Danish rules the ship will be subject to US Coast Guards rules when calling at a harbour in U.S.

The closest competitor to the cargo is a Greek ship owner with a ship under Vanuatu flag with an Indian crew. The ship may even be a sister ship from the same Chinese wharf.«

8. Barriers to the initiative

The prime problems have been the 'anarchy' and 'creativity' shown by the employees in their 'individual' use of IT - threatening with inefficiency. This problem was met with 'standardisation' and sharing of data by means of an intra-net, a project server and a set of guidelines.

9. Impact(s) of the Initiative

One of the spin-offs by introducing the flexible working scheme has been that the company was forced to closer focus at business processes and consequently optimising these. This exercise has contributed considerably to NTD's overall competitiveness.
Seen from outside it must however be understood, that the management of NTD has not explicitly realised development of the company as implementation of a 'flexible working strategy' but rather as the implementation of the 'most efficient way to meet requirements' and a way of exploiting new technological opportunities. Nevertheless the result is the same: A more efficient organisation. An important factor has been that a core of employees is used to work together on similar tasks for several years thereby easing the set-up and operation of the current organisation.
Generally experiences have been positive. Skills have improved and productivity, product and market development increased. From a local perspective the prime benefit has been the recreation of workplaces and the associated economy.
The only concern expressed is uncertainty about long term stability, but as the IT set-up and exploitation continuously improve this concern is primarily related to the market situation and the ability to further improve employees' skills and knowledge
The most concrete disadvantage is according to the managing director: "You never know how many rolls to take from the baker in the morning..."
Although humoristic this remark represent a concern for real potential problems in the flexible organisation, namely how to cater for preservation and development of the team spirit and company identification of the employees when working from everywhere.

10. Lessons Learned from the Case Study

The transition from the old fashioned way of working in the concrete physical shipyard towards the abstract telework in the virtual shipyard represented a considerable threshold for some employees who had to learn how to manage.
Another major lesson is that it is absolutely mandatory to be able to manage and control IT functionality and development and to be able to exploit advanced technologies. Survival depends heavily on the ability to be flexible and efficient.
It is the general opinion that more virtual organisations will emerge in the future due to fluctuating markets, which require a flexible work force independent of place - and in the global market - also of time.

11. Expectations and future plans

It is expected to increase the teleworking staff another 25% in the future.
In particular the attention will be focussed at growth strategies and keeping qualifications competitive.

12. Contact Information:

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