DEVELOPING NORTH SOUTH SOFTWARE QUALITY NETWORKS

There is considerable scope for software companies in both parts of Ireland to increase competitiveness through reduced costs, reduced rework and faster time to market with new products. This can be achieved by sharing best development practice through North-South Software Quality Networks.

Software Quality Networks

Software Quality Networks (SQNs) are about companies working together to improve their software development process, and hence achieving international competitiveness through reduced rework, lower support costs and faster to market with new products. By sharing experience and mutual advice, SQNs can lower the cost of achieving best practice.

International Best Practice in Software Process Improvement

There are three main models used by companies to implement software process improvement.

The ISO9000 series of standards cover a generic model applicable to all industries. The standard covers all activities within the software life-cycle, and supporting activities, such as purchasing and contracts. A new version of the standard, ISO 9001:2000, uses a process model approach, with a greater emphasis on continuous improvement.

The Capability Maturity Model (CMM) was developed by the Software Engineering Institute, under contract from the US Department of Defence. It uses a five layer model that prioritises the activities required to promote improvement for an organisation at a particular level of maturity. The model has become increasingly popular, both internationally, and within different sectors of the software industry.

Software Process Improvement Capability dEtermination (SPICE), or ISO 15504, is being developed as an international standard and will cover most of the activities of a software company. Since it has an emphasis on focussed improvements, it is suitable for organisations of any size, and can be applied to the aspects of a company's activities that are most beneficial to its success.

ISO 9000

Scope	Very widely accepted in Europe among large and small companies.
Benefits	Well known and accepted. Low cost. Covers most business activities.
Disadvantages	Generic. Poor on continuous improvement.

Capability Maturity Model

Scope	Popular with larger companies, especially in USA.
Benefits	Long history. Developed for software cos. Good record.
Disadvantages	Cost. Low European penetration. Developed for large companies.

SPICE (ISO 15504)

Scope	Supported by European Commission.
Benefits	Moderate cost. Applies to most business activities.
Disadvantages	No USA penetration. Still being developed.

Benefits of Software Process Improvement

As a result of work in the US, it has been established that the use of CMM has enabled companies to win out in the market place. A study published in the Communications of the ACM highlighted the following improvements for companies following CMM for process improvement:[1]

Category	Range	Median
Gain in Productivity (annual)	9% to 67%	35%
Reduction in Time to Market (annual)	15% to 23%	NA
Reduction in Post-Release Defects (annual)	10% to 94%	39%
Return on Investment	4.0 to 8.8:1	5.0:1

[1] Software Quality and the Capability Maturity Model by Herbsleb, Goldenson, Hayes and Paulk, Communications of the ACM 40, 6 (June 1997): 30-40

In Ireland, a number of companies have benefited from undertaking a software quality initiative. Singularity employs some 50 staff in their offices in Londonderry and have been ISO9000 certified since 1994. Sean Canavan, Quality Manager, states that ISO9000 has provided a platform for the company to produce quality software for their demanding customers. NewWorld Commerce (formerly Cunav Technologies), a Dublin-based consultancy, used the SPIRE approach (based on SPICE) to identify that it could improve its requirements analysis process. Improving the requirements analysis process impacted the company's overall development process in several key areas, in particular, by reducing the amount of rework, and increasing the accuracy of its time and budget estimates.

International Software Quality Networks

There are different and complementary models for Software Quality Networks.

In Europe, eighteen projects, supported by the European Commission, resulted in the setting up of a number of ESPINODES (European Software Process Improvement NODE). These are regional centres of excellence charged with the dissemination of software process best practice.

The ESPINODES cover all of Western Europe, Greece and Israel.

In the United States, Software Process Improvement Networks (SPINS), were set up as a means of companies involved in software process improvement to share their experience and ideas. Active SPINS now exist in most parts of the world, including the UK and Ireland.

Software Quality Networks in Ireland

- Northern Ireland Growth Challenge set up the Software Quality Network in Northern Ireland. This has been incorporated into the Software Industry Federation as a Special Interest Group. It has held workshops to share experience and advice, and is acting as a liaison body between the software industry and the Centre for Software Process Technologies at the University of Ulster.

- The Centre for Software Engineering, Dublin, is the Irish node of the ESPINODE initiative. It also facilitates an Irish SPIN, currently through ESPINODE, which organises presentations and workshops aimed at promoting and supporting best practice to the local software industry.

IBEC – CBI
TRADE & BUSINESS DEVELOPMENT PROGRAMME

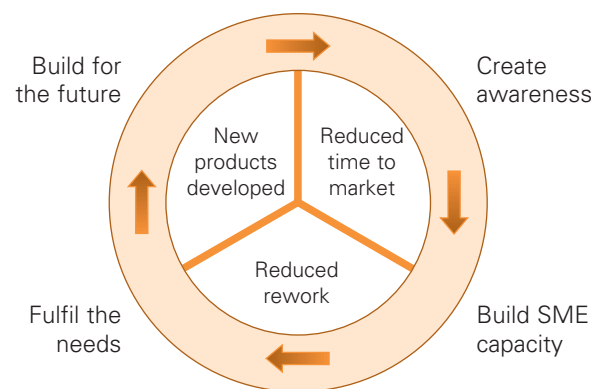## Developing North South Software Quality Networks

The IBEC-CBI Trade and Business Development Programme is co-operating with the Centre for Software Engineering in the Republic of Ireland and the Software Industry Federation in Northern Ireland to respond to the needs of Irish SME's in the software sector. It is proposed to network best practice by setting up a North-South Software Quality Network.

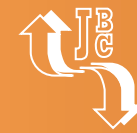The objective is to move from awareness to action that

will:
- Meet SME needs and build capacity in the software sector in Ireland North and South.
- Connect with key Northern and Southern providers of services related to the 3 main Software Process Improvement models.
- Lead to a sharing of best international practice and produce real benefits for Irish SME's in the software sector.

North-South Software Quality Network Process

Build for the future

Create awareness

New products developed

Reduced time to market

Reduced rework

Fulfil the needs

Build SME capacity

It is envisaged that the network will hold North-South workshops and seminars to promote best practice examples in Ireland. For further information and to record your interest please contact ...

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sharing best practice