Qualification Systems in Germany and Recent Developments*

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1. Is lifelong learning something new?

“Everything flows”, said Heraklit, an old greek philosopher.

“tempora mutantur et nos mutamur in illis” (Times are changing, and with(in) them we are changing, too) goes an old roman saying.

“Nothing is more constant than changes” – this is a finding of today.

Since the rise of mankind we had to adjust to changing conditions of the environment in a process of trial and error, thus learning to survive – by learning, lifelong learning, to be sure. Nowadays we would circumscribe this an a process of informal learning in the world of work and every-day life. Indeed, these processes have been under way ever since, and – as Darwin put it – only the fittest would survive. So lifelong learning is by no means something new, but seemingly it becomes more and more important.

Why is this so?

There are some mega-trends to face and to cope with:

- globalisation links the world
- information flows faster all over the world and 24 hours a day
- knowledge is one of the fastest growing segments
- knowledge, too, is therefor one of the fastest ageing segments
- changing concepts of production (“virtual factory”)
- new concepts of working time and work organisation (flexible work schemes, team work, lean management)
- demographic changes (“ageing societies”)

If this is so, education and training, especially initial and continuing vocational training have to be developed further to meet these challenges.

In earlier days one could say: “once a craftsman – always a craftsman”. The knowledge and skills, one would acquire during the initial vocational training would suit for a lifetime.

Nowadays, due to information – overflow, rapid growth of knowledge, the primary qualifications and skills deteriorate in short terms, menacing both, employability, personal chances and the enterprises needs for qualified staff. In this situation lifelong learning turns out to be a “conditio sine qua non” – a necessary condition.
2. What is lifelong learning?

The scale of current economic and social change, the rapid transition to a knowledge-based society and demographic pressures resulting from an ageing population in Europe are all challenges which demand a new approach to education and training, within the framework of lifelong learning.

In the context of these challenges, lifelong learning was given a high priority at the European Council meetings of Lisbon, Stockholm and especially Feira.

The European Commission defines lifelong learning as "all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competence, within a personal, civic, social and/or employment-related perspective." (1)

Lifelong learning, according to the European experts (1), is therefore about:

- acquiring and updating all kinds of abilities, interests, knowledge and qualifications from the pre-school years to post-retirement. It promotes the development of knowledge and competencies that will enable each citizen to adapt to the knowledge-based society and actively participate in all spheres of social and economic life, taking more control of his or her future.

- valuing all forms of learning, including: formal learning, such as a degree course followed at university; non-formal learning, such as vocational skills acquired at the workplace; and informal learning, such as inter-generation learning, for example where parents learn to use a PC through their children, or learning how to play an instrument together with friends.

Learning opportunities should be available to all citizens on an ongoing basis. In practice this should mean that citizens each have individual learning pathways, suitable to their needs and interests at all stages of their lives. The content of learning, the way learning is accessed, and where it takes place may vary depending on the learner and their learning requirements.

Lifelong learning is also about providing "second chances" to update basic skills and also offering learning opportunities at more advanced levels. All this means that formal systems of provision need to become much more open and flexible, so that such opportunities can truly be tailored to the needs of the learner, or indeed the potential learner.

The discussion about lifelong learning in Europe goes back to the 70ies of last century, when Paul Legrand, UNESCO-member and responsible for adult education introduced the term in the political discussion ("Introduction to lifelong learning"), followed by various publications of UNESCO, OECD and the European Community, especially the commission staff working paper "A Memorandum on Lifelong Learning"(2000) (2) and “Lifelong Learning Practice an Indicators”(2001) (3).

In Germany, the most recent publication dealing with the issue, is an intermediate report of the Ministry of Education and Research’s expert commission on Funging of Lifelong Learning titled “On the Way to Funding Lifelong Learning”(2002) (4), which contains not only a survey on the understanding of
lifelong learning, an outline of social developments making lifelong learning a must, describing the further training situation in Germany under legal, economic and supply/demand aspects as well as scheming out basic elements of a coherent system of funding further training, all these issues being backed by various statistics. In the following chapters, I therefore will partly refer to this study, as far as data, descriptions and definitions are concerned, but, too, will introduce the European point of view, and also point out, what the German chemical industry has done and will do in this crucial field.

The expert commission’s definition of lifelong learning is as follows: “Life
long learning encloses the total of all formal, non-formal and informal learning all over a person’s entire life-cycle (4). This is, in fact, a very wide definition, but, according to Fontane “this is a wide field…”. 
3. Europe’s six key messages

In the European Communities’ Memorandum (2) six key messages are focused in order to take action on lifelong learning. This key messages are also in the centre of discussion in Germany and show, what Germany is driving at in accordance with the European Union. Recent developments in Germany deriving from this set of messages will be discussed later.

Key message 1: New basic skills for all

The objective is to guarantee universal and continuing access to learning for gaining and renewing the skills needed for sustained participation in the knowledge society and economy. The new basic skills are

- IT-skills
- Foreign languages
- Technological culture
- Entrepreneurship
- Social skills

It is important to note, that this is not a list of subjects known from schooldays and beyond. These skills are especially needed in the labour market and at work. Some of these skills, like “digital literacy” are new, others, like foreign languages are becoming more and more important. As well as social skills such as self-confidence, self-direction, self-responsibility and risk-taking, because people are expected to behave much more autonomously than in the past. Entrepreneurial skills release capacities both to improve individual job performance and to diversify company activities. Learning how to learn is a generic skill, everyone should acquire.

A solid command of these basic skills is crucial for everyone, but it is only the beginning of learning throughout life.

Key message 2: More investment in human resources

The objective is to visibly raise levels of investment in human resources in order to place priority on Europe’s most important asset – its people. This means not only that current investment levels are too low to ensure the replenishment of the skills pool, but to re-think, what counts as investment at all, e.g. with respect to taxation regimes and accounting standards.

The German situation shows human capital formation on the uplift:
Relation between real capital and human capital in Germany, quoted after the expert commission on funding of lifelong learning (4):

<table>
<thead>
<tr>
<th>Year</th>
<th>real capital</th>
<th>human capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>1970</td>
<td>3,2</td>
<td>1</td>
</tr>
<tr>
<td>1989</td>
<td>2,2</td>
<td>1</td>
</tr>
<tr>
<td>1989 in € bn</td>
<td>5.083</td>
<td>2.293</td>
</tr>
</tbody>
</table>

in prices of 1985
At an individual level, the idea of “learning accounts” have come up, encouraging people to contribute to their own learning costs by special savings and deposits, that attract matching or supplementary grants and benefits from public and/or private funding sources. Company schemes that give employees an amount of time or money to pursue learning are another example. In this field the social partners could play a decisive role, negotiating agreements for co-funding of learning for employees and flexible work arrangements, that make participation in learning practically feasible.

Key message 3: Innovation in teaching and learning

The objective is to develop effective teaching and learning methods and contexts for lifelong learning. As there is a clear trend towards individualisation of learning in order to meet specific interests of both learners and companies, this implies both improving existing practices and developing new and varied approaches to take advantage of the ICT-possibilities (Information-Communication-Technology) and of the full rage of learning contexts. This also implies a major shift towards user-oriented learning systems with permeable boundaries across sectors and levels. So the emphasis has to lie on “contextual and blended learning” as well as on “self-directed and self-responsible learning”. This, too, will change the role of teachers and trainers into the direction of guides, mentors and mediators.

Key message 4: Valuing learning

The objective is to significantly improve the ways in which learning participation and outcomes are understood and appreciated, particularly non-formal and informal learning. Developing and using human resources requires transparency. In this context diplomas, certificates and qualifications are an important reference point for employers and employees alike. This could set a trend towards a higher demand for recognised learning and as well towards a modernisation of national certification systems. The EC-memorandum suggests to develop high quality systems for the Accreditation of Prior and Experiential Learning (APEL) in order to evaluate and recognise individuals’ existing knowledge, skills and experience gained over long periods and in diverse contexts, including in non-formal and informal settings (e.g. workplace-based and work-related learning). In the EC, a number of assessment and recognition instruments have been installed. These include ECTS (European Credit Transfer Scheme) and the European Diploma Supplement (in the higher education sector), EUROPASS (for work-linked training), the ECDL (European Computer Driving Licence). A European Diploma for basic IT-skills will be developed through the eLearning initiative. But, the EC is also aware, that diverse national terminology, different educational systems and varying cultural backgrounds make transparency and mutual recognition a “hazardous and delicate” exercise.

Key message 5: Rethinking guidance and councelling

The objective is to ensure that everyone can easily access good quality information and advice about learning opportunities throughout Europe and throughout their lives. As a continuously accessible service for all, guidance has to overcome the “classical” distinction between educational, vocational and personal guidance. On the company level this means to understand and organise initial and further vocational training and
well as human resources development as one coherent system. In addition the systems of provision will have to more and more shift from a supply-side to a demand-side approach, with the guidance and counselling professionals shifting to “brokers”. Even if totally or partly privatised, the public sector has to set agreed minimum quality standards and to define entitlements.

**Key message 6: Bringing learning closer to home**

The objective is to provide lifelong learning opportunities as close to learners as possible. As an experience, for most people learning happens locally. Local and regional authorities are the ones, who provide the infrastructure of access to lifelong learning, including child care, transport and social welfare. Civil society organisations, too, have their roots here. In this context, e.g. learning centres in everyday locations could bring learning closer to the potential learner. On the other hand, ITC offers great potential for reaching scattered and isolated populations.
4. How the German system works

Now presenting the German system of vocational education and training, I will refer to a summary report prepared by Dr. Christopher for CEDEFOP (5), enriching it with new data and recent developments and enclosing my practical experience in the field of newly developing or renovating occupation and training regulations within the so called “dual system”. A general overview on the German education system (6) including an explaining glossary can be found in annex C.

4.1 The Education System and Participation in Education

To give an overview, some statistical data (most recent data available):

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
<th>unit</th>
<th>year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Macroeconomics:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross Domestic Product</td>
<td>2.071,20</td>
<td>Euro bn</td>
<td>2001</td>
</tr>
<tr>
<td>Per resident</td>
<td>25.200,00</td>
<td>Euro</td>
<td>2001</td>
</tr>
<tr>
<td>Per employed person</td>
<td>53.200,00</td>
<td>Euro</td>
<td>2001</td>
</tr>
<tr>
<td>In real terms (productivity)</td>
<td>50.900,00</td>
<td>Euro</td>
<td>2001</td>
</tr>
<tr>
<td>Labour cost</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per Employee</td>
<td>2.680,00</td>
<td>Euro</td>
<td>2001</td>
</tr>
<tr>
<td>Per Hour</td>
<td>24,00</td>
<td>Euro</td>
<td>2001</td>
</tr>
<tr>
<td>Employed Persons</td>
<td>38.685,00</td>
<td>millions</td>
<td>7/2002</td>
</tr>
<tr>
<td>Unemployed Persons</td>
<td>3,941,00</td>
<td>millions</td>
<td>8/2002</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>10,5</td>
<td>percent</td>
<td>8/2002</td>
</tr>
<tr>
<td>Under 25 years</td>
<td>9,9</td>
<td>percent</td>
<td>8/2002</td>
</tr>
<tr>
<td>Under 20 years</td>
<td>5,9</td>
<td>percent</td>
<td>8/2002</td>
</tr>
<tr>
<td><strong>School system:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pupils (general schools)</td>
<td>10.048,8</td>
<td>1.000</td>
<td>2000</td>
</tr>
<tr>
<td>Pupils (all types of Vocational schools)</td>
<td>1.723,2</td>
<td>1.000</td>
<td>2000</td>
</tr>
<tr>
<td><strong>Dual (initial) Vocational System:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New apprentices</td>
<td>613.853</td>
<td>number</td>
<td>2001</td>
</tr>
<tr>
<td>All apprentices (contracts)</td>
<td>1.702.017</td>
<td>number</td>
<td>2000</td>
</tr>
<tr>
<td>total supply</td>
<td>638.387</td>
<td>number</td>
<td>2001</td>
</tr>
<tr>
<td>total demand</td>
<td>634.314</td>
<td>number</td>
<td>2001</td>
</tr>
<tr>
<td>Average apprentice-Ship earnings</td>
<td>585</td>
<td>Euro</td>
<td>2001</td>
</tr>
<tr>
<td>(Monthly)</td>
<td>497</td>
<td>Euro</td>
<td>2001</td>
</tr>
<tr>
<td>Gross average cost</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per Apprentice</td>
<td>17.923</td>
<td>Euro</td>
<td>1997</td>
</tr>
<tr>
<td>Total costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- enterprises</td>
<td>21,730</td>
<td>Euro bn</td>
<td>2001</td>
</tr>
<tr>
<td>- enterprises + state</td>
<td>29,348</td>
<td>Euro bn</td>
<td>2001</td>
</tr>
</tbody>
</table>

For more detailed data see (7) and especially annex E.
It should be noted that the unemployment rate is in relation to the dependent civilian labour force, the rate for young persons under 20 is the lowest of all categories registered and also among the lowest in Europe, indicating the efficiency of the German dual system. Furthermore in the last 10 years the German economy succeeded in more ore less balancing supply and demand of training opportunities without major state intervention especially without imposing a “special apprenticeship-fee” on the enterprises. In 2000 and 2001 the supply-demand-ratio was 100,3 and 100,6. The preliminary data for 2002 indicate, that balance can approximately be reached again. Nevertheless, the years up to 2007 will take a lot of effort to absorb the rising number of school leavers.

It should also be noted, that enterprises spend about 21,7 billion Euro to fund initial vocational training, with the public sector added the amount rises to 29,3 billion Euros. One should keep in mind, that the statistics of these costs are partly based on calculations and estimations, not on empirical data. So these figures more or less only show the rough dimension.

The education system in the Federal Republic of Germany has two features which distinguishes it from the education systems of most other industrialised nations: There are three or four parallel but separate types of school at the lower secondary level, preceded by a common primary school. The ‘dual’ form of vocational training is very important. Its main function is to supply skilled workers through in-company training.

In the Federal Republic of Germany schools - both general and vocational - as well as universities and institutes of higher education are usually State institutions. Private educational institutions - for which there are special Länder (= federal states within the Federal Republic) laws governing licensing, recognition and financial support – still play a subordinate but growing role in terms of pupils and students. Compulsory schooling starts at age six and usually ends after nine years of full-time compulsory education. In all Länder general education is followed by vocational school - usually three years – for young people who do not go on to full-time higher general education (e.g. grammar school). All schools - both general and vocational - as well as institutes of higher education and universities, are free.

In order to allow all young people to choose training which is in keeping with their interests and aptitudes, regardless of their family’s financial situation, financial support is available under the Federal Law on Education and Training Promotion.

4.2 Initial Vocational Training - Objectives

Basic knowledge and key skills are already taught in schools of general education with the aim of providing preliminary vocational guidance. The education system tries to attach equal importance to vocational education and training and general education. Yet the enterprises claim that the vocational part including the understanding of the working process and the economy gets the shorter end.

Vocational training has two main aims: firstly, to satisfy the demands of businesses for various skills and thus serve economic policy interests and secondly, provide young people with a basis for a successful career and thus contribute to their personal development. In so far, there is a close link between training and
employment opportunities. The labour market demands higher qualifications. Knowledge and skills help to secure jobs. In contrast, the demand for semi-skilled and unskilled labour has been falling steadily over the past years. Training encourages readiness to learn. Today, training is essential for anyone who, faced with the fast pace of technological change and world wide restructuring, wants to maintain his level of job performance or engage in a skilled occupation. Learning in a work environment promotes personal development, in particular independence, self-esteem, teamwork, general work ethics and motivation.

The vocational education and training system provides initial vocational training, promotes career development through further training and gives suitable candidates the chance to acquire qualifications up to the university entrance certificate.

What is in need in Germany however, is a greater transparency of the different systems and, although regulations have been improved recently, there is more need for permeability, shall the dual system furthermore be attractive for qualified people in terms of income and in terms of career. The openness of the dual system will be a crucial point not only for the survival of the system itself but moreover for the chance of recruiting qualified personnel in the future, when less younger people will be available in the workforce due to demographic changes.

4.3 Dual System of Vocational Training

The majority of all school leavers - around 70% (The Report on Vocational Education and Training for the Year 2002, (7), mentions a quota of 69,9 % in 2001 compared to 72% in 2000) - train for a state-recognised occupation in the dual system. Access to the dual system is not tied to a certain school certificate: it is, in principle, open to all. Yet, the formal and real situation is “slightly” different. Especially the new occupations and training regulations have been setting higher standards e.g. in the IT-sector or the chemical sector, so that pupils leaving school with 10th grade often fail to serve the demands or do not pass the “entrance – tests” of the enterprises. This is the flip side of higher qualifications and standards. Those who cannot cope with the rising requirements have to render poorer and worse paid occupations – a special problem to be solved by less theoretical and more practical recognises occupations and training regulations for low achievers.

The dual system characteristically has two learning venues: enterprise and vocational school. Most learning within the dual system is done in business enterprises. The young person is apprentice in an enterprise, in a liberal profession or in the public sector, and is released to attend vocational school. Whereas the in-company vocational training concentrates on teaching specialised practical skills and providing the necessary occupational experience, the vocational school focuses on providing the specialised theoretical knowledge for the relevant occupation and on consolidating and improving the level of general education.

Yet, the formal and real situation is “slightly” different again. Enterprises often have to “repair”, what is not provided in vocational school, in own special theoretical backings, thus installing a kind of “trilateral” system. On the other hand, vocational schools often have to feed pupils with general education ad skills, in order to make them fit for vocational training at all --- the so called PISA–Study recently outlined the
shortcomings of the general school system in terms of elementary basics like reading, writing, memorising and calculating. So tackling lifelong learning has to start here, even earlier in the pre-school sector.

The responsibility for each of the two learning locations is divided. The federal government has competence for in-company vocational training. The Basic Law provides that the Ministries of Education and Culture of the Länder have competence for school vocational training in educational establishments. The term ‘dual system’ refers to the constitutional allocation of competence for the different learning venues.

Neither vocational schools nor enterprises are uniform learning venues. Various types of vocational school exist, as do widely differing forms of learning in enterprises. Besides training workshops in large enterprises and workplace learning, there are also inter-company training centres, particularly in the crafts and construction sectors. The small and medium-sized enterprises in this sector – which train about two-thirds of all young people in the dual system – utilise these inter-company training centres to provide trainees with the knowledge and skills prescribed in the training regulations. At present there are around 100 000 places in inter-company training centres, which are also used for continuing training schemes.

4.4 Other Forms of Initial Vocational Training

Apart from the dual system of vocational training there are a number of other training courses which take place in educational establishments. Particularly in the occupational fields of business and administration, personal hygiene, health and home economics occupational qualifications are acquired in full-time training courses in educational establishments. These are usually specialised vocational schools offering three-year courses leading to vocational qualifications - usually governed by Länder legislation - which for various reasons cannot be acquired in the dual system.

Full-time specialised vocational schools are quantitatively less important and provide vocational qualifications that can also be acquired in the dual system.

Recently, these types of schools gained competitiveness in the eyes of the enterprises due to costs. The argument runs as follows: why pay remuneration for 3 years vocational training when you can get qualified persons from those schools for free. They are fit in theory (hopefully), and the “practical rest” can be trained on the job. So, if the dual system of vocational training does not allow for more workplace training and work-related training, i.e. working under “reality conditions” in the real work process, thus contributing value added and gradually smoothing into the real business life without major breaks as well, it might well be coming into problems. Exactly this was realised by those renewing the old training regulations and introducing new ones. The key issue was to unify “professionality” on the one side with “enterprisability” on the other side, which simply meant for those to employ apprentices finished: What you need is what you get – in tailor made way! So new training regulations allow much more flexibility and optional qualifications or settings to meet the diverse demands.

In addition there are full-time specialised vocational schools which do not confer vocational qualifications, but only basic vocational training in a specific occupational field. This period of training (one year) can be credited to trainees if they enter the
dual system, shortening the length of training in this system. Some pupils see this form of full-time specialised vocational school as a 'stopgap' until they can start another course of training, usually in the dual system.

Yet, the formal an real situation is “slightly” different again. In the chemical industry for example almost no one comes into vocational training with one year credited, because the knowledge and skills provided there are considered insufficient. So this year often turns out to be a lost year.

Universities, institutes of higher education and specialised institutions of higher education also provide occupational qualifications. A pre-condition for enrolment at this level of education is the general or specialised university entrance certificate, which is usually acquired after 13 years of school. University courses are meant to be completed in four years. The actual average duration of studies is about six years, however.

Enrolment in a specialised institution of higher education requires the certificate of aptitude for specialised short-course higher education. This can usually be acquired after a 12-year course of education, for example at a higher technical school or a college school.

Because of the educational policy of equivalence of vocational and general education, recent Länder regulations make it possible to enrol in this level of education with a vocational training certificate and a certificate of further training to master craftsman or supervisory level, depending on certain other criteria.

As mentioned before, this is a decisive progress in harmonising the different education systems in a coherent way and makes the dual system more attractive for young people.

4.5 Recognised Occupations and Training Regulations in the Dual System

The dual system provides training in State-recognised occupations. These are developed and adapted to meet the demands of the world of work through close co-operation between federal and regional governments and the social partners. The total number of recognised occupations stands presently (at the end of 2002) at around 350. The number of recognised occupations, which stood at 606 in 1971, has been substantially reduced. This does not mean, however, that fewer occupations require training today. It means that reclassification has bundled recognised occupations to cover a wider range of activities. This ensures greater mobility and flexibility for employees in their subsequent occupations.

The fast reaction of vocational training to the growing demands and rapid structural transformation of the economy is demonstrated by the fact that about 180 training regulations have been newly developed or rewritten since 1996. Especially due to initiatives of the social partners, who are the ones to suggest the renewal or the introduction of completely new occupations and training regulations, a series of newly recognised occupations has been created, for example in the areas of information and communications technology.
Training regulations set out minimum standards for the content and scope of training. However, they leave enough leeway in practice to react to new technological and economic demands. Training regulations are issued by the minister responsible (Federal Ministry of Economy and Technology), in conjunction with the Federal Ministry of Education and Research, according to a procedure established in agreement with the social partners. They set out the legally binding terms for in-company training. All training regulations contain details on the name of the recognised occupation and the duration of training, as well as the skills and knowledge to be acquired (occupational or training profile). They also contain instructions on the material and chronological order in which skills and knowledge should be taught (overall training plan), as well as examination requirements.

Since a couple of years the newly issued training regulations are completed by a multilingual training profile (German/English/French), containing important information on the qualifications acquired, with the aim of improving the comparability of qualifications in EU Member States (8) (also see annex D for examples).

In-school vocational education follows skeleton curricula issued by the Conference of Länder Ministers of Education and Cultural Affairs, which the individual Länder have to enact as Länder laws.

These curricula normally should follow the respective overall training plan. But due to the divided responsibilities and the individual Länder adaptations one has to concede, that here are some critical interfaces as well as in co-ordinating enterprise and school activities on a local level. Especially at the face more information and co-operation is badly needed, regardless of very good examples, too. (The German chemical social partners recently have published and jointly rewarded best practice examples in “learnplace co-operation”.) (9)

4.6 Personnel in Vocational Training

A characteristic feature of the dual system is the clear distinction made between instructors in enterprises and teachers in vocational schools. Their different working conditions lead to considerably different roles, status, qualifications and fields of work – and, on the other hand, stresses the necessity of “trustful co-operation”.

Only suitable persons, i.e. those with the relevant specialist and teacher training and inclinations, are eligible to become instructors in enterprises. A master craftsman diploma (for trade crafts) or the master craftsman diploma or qualification in an appropriate recognised occupation (for non-trade craft occupations) is usually considered evidence of specialist qualification. Proof of ability to teach occupational and work-related subjects is also required. A new skeleton curriculum for ‘Training Trainers’ has been in effect since 1998. The contents of the new curriculum, which are organised according to subject, aim to teach instructors, in practice-oriented courses, how to elucidate the tasks and problems typical of their future field.

In trade and industry, agriculture, the public sector, the liberal professions and home economics alone, about 530 000 instructors are registered with the “competent bodies” (especially the different chambers).
Vocational school teachers acquire their ‘first state examination’ within the framework of educational science studies. Minimum duration, subject combination and intensity of specialist and pedagogical studies are prescribed. This ‘first state examination’ is followed by a two-year practice teaching period which includes a study seminar and occupational experience in a training school. This leads to the ‘second state examination’. Teachers give instruction in the basic theory of the occupations in which they have specialised.

1997 statistics showed approximately 52 500 teachers to be working in vocational schools and about 14 600 in higher technical schools and specialised schools.

4.7 Continuing Vocational Training

The importance of continuing vocational training is growing because rapid technical developments lead to changes in occupational requirements at ever shorter intervals and make the adaptation of vocational qualifications absolutely necessary.

Continuing vocational training also helps to prevent unemployment. In some cases, initial vocational training is closely linked to continuing training. (This is a special point of the chemical industry social partners, closely linking initial and further training).

A distinction should be made between two types of continuing vocational training: further vocational training and vocational retraining.

**Vocational further training** which begins after completion of vocational training and during a phase of occupational activity, is directed firstly towards adaptation of vocational skills to new technical and occupational developments by means of on-the-job training measures - usually in the enterprise itself. Secondly in-company, extra-plant and in-school courses can lead to occupational advancement or to a higher qualification as middle-level skilled worker or supervisor (e.g. foreman).

**Vocational retraining** becomes necessary when no more openings are available on the labour market in the occupation for which a person has trained. The most common objective of vocational retraining is to acquire new qualifications as a skilled worker. It usually takes place in extra-plant centres. People in retraining and further training are eligible for financial support in accordance with the Social Security Code, Volume III. Thus participants can claim for expenses for training measures and even receive support for living expenses.

Germany has a differentiated system of continuing vocational training, with various organisational structures and forms of funding related to the varying contents, functions and objectives of continuing vocational training. In contrast to the strictly organised dual system of vocational training, with its clearly defined areas of responsibility, continuing training has grown spontaneously and pragmatically.

On account of this situation, the empirical basis as further training is sort of shallow, supply- and demand side are extremely heterogeneous, there are different statistics and polls, various definitions and sources, so - as the expert commission on funding of lifelong learning stated – it is almost impossible, to draw a clear picture of the situation. (4)
The following data might as well serve as an illustration of the German further, not only vocational, training scenery:

**Supply side**

<table>
<thead>
<tr>
<th>Responsible Body</th>
<th>share in further training ( participations)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employer/enterprise</td>
<td>25 %</td>
</tr>
<tr>
<td>Adult colleges (&quot;Volkshochschule&quot;)</td>
<td>14 %</td>
</tr>
<tr>
<td>private institutes</td>
<td>12 %</td>
</tr>
<tr>
<td>chambers</td>
<td>3 %</td>
</tr>
<tr>
<td>associations, federations</td>
<td>5 %</td>
</tr>
</tbody>
</table>

Enterprises are the most important providers of continuing vocational training. Large concerns usually operate their own continuing training departments, responsible for planning, implementing and evaluating continuing training measures. Other providers and agencies for widely differing continuing vocational training programmes are the chambers of trade and industry, business educational foundations, employers associations and trade union further training foundations, institutions of higher education with courses for those in employment, and private continuing training companies. Adult education centres play a major role in the area of general continuing education and training.

On the demand side, the question is, what it actually depends on. There seem to be at least four aspects:

Firstly: capability to learn individually  
Secondly: supply side offers, which are “inviting”  
Thirdly: purchasing power  
Fourthly: time to learn

**Demand side**

<table>
<thead>
<tr>
<th>Participation in further training in Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>37 %</td>
</tr>
</tbody>
</table>

further vocational training

|                                          | 30 % | 29 % |

Participation in continuing training was increasing steadily but went down from 1997 to 2000. The reasons therefor are not clear. It might be a merely statistical problem, it might be a problem of sinking employment and probably of cost cutting. The chambers of trade and industry statistics for 2000 also showed a certain decline e.g in further vocational training examinations from 142.085 in 1999 to 131.206 in 2000. Also participation in further training according to the Social Security Code, Vol. III. shrank by 18.5 % to 449.922 in 2000.
Anyway it is remarkable that numbers have gone down recently in official statistics, whereas surveys carried out by industry, by the chemical industry, too, seem to indicate a further rise in participation. This could be so because further vocational training seems to have shifted to in-house training, to shop-floor training, to training in the workplace, focusing on specific company needs, e.g. to optimise workflow, to introduce new technologies and management methods, rise productivity and cutting costs. Supposedly, this part of the game is hard to cover by statistics. Yet, according to recent surveys (“reporting system further training VIII”) participation in further training, showed remarkable quotas in the non-formal and informal sector:

<table>
<thead>
<tr>
<th>Year</th>
<th>sort of further training</th>
<th>participation ratio in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>general</td>
<td>27 / 24 (west /east)</td>
</tr>
<tr>
<td>2000</td>
<td>vocational</td>
<td>28 / 31</td>
</tr>
<tr>
<td>2000</td>
<td>informal</td>
<td>65 / 75</td>
</tr>
</tbody>
</table>

### 4.8 Organisation and Competence

A number of bodies are responsible for ensuring that the provisions of the Vocational Training Act and the Promotion of Vocational Training Act are enforced on the federal, Länder and regional levels. The social partners are granted considerable rights of participation, structuring and decision-making. This form of co-operation on the federal, Länder, regional and enterprises levels – based on an assumption of mutual responsibility for planning, implementing and developing vocational education and training – has proved successful in the past.

But according to the divided responsibilities and the political interest of each participating group decision processes often have become wearisome, stalling renewal processes. And –due to the “consensus principle” (everybody has to agree) final compromises in some cases were more or less far away from the prior ideal intentions. So – in my opinion and according to my experience - the system is but able to be modernised (from within), but sometimes only step by step and at “snail – speed”.

### 4.8.1 National Level

The federal government is responsible for in-company vocational training. For this reason, the most important law, the **Vocational Training Act of 1969**, regulates the implementation of in-company vocational training for the whole of Germany. The **Crafts Code** issued by the Federal Ministry of Economics also covers this sector.

The **Federal Institute for Vocational Training** functions on this level. It conducts research and development in the sphere of in-company vocational training and fulfils mandated service and consulting functions to the federal government and vocational training providers. The “main committee” advises the federal government on fundamental issues of in-company vocational training. Under paragraph 9 of the **Promotion of Vocational Training Act** a subcommittee is responsible for harmonising the national training regulations and the school skeleton curricula of the individual Länder.
4.8.2 Länder Level

The Basic Law provides that competence for school education – vocational and general, as well as university and higher education – lies with the Länder Ministries of Education and Cultural Affairs. The Ministers of Education and Culture of the Länder co-operate in the Standing Conference of the Länder Ministers of Education and Cultural Affairs to ensure a certain measure of uniformity and comparability, especially in school and higher education policies of national significance. The decisions of the Standing Conference of the Länder Ministers of Education and Cultural Affairs are Länder recommendations and only become legally binding when passed by the individual Länder parliaments. The Länder have committees for vocational training, with equal representation of employers, employees and the highest Länder authorities. They advise the Länder governments on vocational training issues in schools.

4.8.3 Regional Level

On the regional level the autonomous administrative organisations of industry, the ‘competent bodies’, have considerable powers. The competent bodies include about 83 chambers of trade and industry for the industrial sector, about 56 chambers of handicrafts for the craft trades, and the appropriate professional boards for the liberal professions in the Länder.

The tasks of the competent bodies are to ensure the suitability of training centres, monitor training in enterprises, support vocational training with advice to training enterprises, instructors and trainees, to establish and maintain a list of training contracts, and to institute the system of examinations and hold final examinations.

The competent bodies also have vocational training committees, which are made up of six representatives each from employers, employees and vocational school teachers, who have to be notified of and consulted on important matters of vocational training. These bodies can establish legal requirements for the implementation of vocational training in their fields.
5. Funding of Vocational Training

The cost of in-company training is borne by industry and other training enterprises and institutions. Public funds cover the cost of vocational schools, including institutions providing full-time schooling. The information on total costs and the shares in funding differ in a wide range. So the Federal Ministry of Education and Research has instituted an expert commission on funding of lifelong learning to find out the overall expenditures in this field, who shares the funding, who finally not pays but bears the costs and how a rational and balanced system could look like. Taking into consideration the data of the Report on Vocational Education and Training of the Year 2002 as well, the funding situation is (rather could be) like that:

The gross costs of initial vocational education and training in 2001 amounted to € 29,348 bn, the enterprises bearing the brunt with € 21,73 bn. (7)

The funding for further training in 1999 totalled € 32,00 bn, the enterprises sharing 54,1 % (€ 17,7 bn), the Federal Labour Office 21 % (€ 6,73 bn), the individuals 17,9 % (€ 5,73 bn) and State 6,9 % (€ 2,22 bn). (4)

(Other sources (10) calculate with a total expenditure (1988) on overall further training of even € 39,6 bn, with an employers/enterprise contribution of € 24,8 bn.)

Total expenditure for vocational training, initial and continuing would sum up to € 61 to 69 bn a year. This range seems to be plausible with a share of 2.9 to 3.3 of the GDP.

The expert commission stated, that in the last years total funding for further training slipped down continuously from 2,15 % of GDP (1986) to 1,62 % in 1999. Yet the experts don’t give a hint what might have been the reason for this dismaying tendency.
6. Developments and Perspectives

The development of vocational training and the dual system is again being hotly discussed in Germany.

Firstly, suitabilty and sustainability:

The suitability and sustainability of the dual system of vocational training for Germany as a production site is under doubt. Initial vocational training is – in an international comparison –

- too expensive,
- the training times are too long (up to 3.5 years),
- the contents are partly obsolete and partly misleading,
- there is a lack of social and methodical competence,
- the training regulations are too inflexible,
- they don’t meet the business requirement for “specific work floor skills”
- the examination system is too expensive
- the system doesn’t allow modularity in training and examination
- the final examinations don’t reflect skills and knowledge in a contextual way as needed in enterprise reality

so the critics argue.

Secondly, focus is on the European dimension:

Vocational education and training plays an essential part in the process of European integration. It supports development and growth of the European Single Market and policies of social cohesion in Europe. From the German point of view, liberalisation of the European labour market need not entail standardisation or generalised, reciprocal formal recognition of educational and training courses and skills certification. Mobility and competitiveness should be ensured by information on training courses and the skills they impart, on the basis of mutual trust in the quality of the national vocational education and training systems. A crucial step in this direction are transparent occupational certificates, like those being introduced gradually in Germany. They are multilingual and contain precise and comprehensible information on skills acquired during training. (8) (also see annex D).

Unfortunately, in a 5–level–scale of the EC, ranging from unskilled (level 1) to university (level 5), evidently due to school – enterprise combination, the German dual system certificates are ranked level 2. Evidently, more school-based training systems are considered to be more sophisticated demanding compared to a combined knowledge- and practical-skill-system with work experience. For the enterprises but also in the political discussion this just doesn’t hold true.

Thirdly, the efficiency of the dual system is in doubt:

Does the economy – on a voluntary base – provide sufficient training opportunities? Indeed, in the mid 90ies there have been – as mentioned earlier - some disparities
but by and large supply and demand could be balanced, admittedly with some public side backing:

E.g., in November 1998 the Federal government introduced a 'Crash Programme for the Reduction of Unemployment among Young People - Training, Qualification and Employment of Young People', to provide 100 000 young people with initial training, supplementary qualifications or employment.

The – actual or potential – dearth of training openings nevertheless has triggered criticism of the dual system. The gap stems from a demographic rise in the number of school leavers and a certain reluctance on the part of enterprises to offer training, as a result of sharply declining employment and, probably, a too cautious estimation of their qualification needs. Yet, the solution certainly will not be found in further regulations or imposing fees, rather should some restrictions of the Vocational education and training act be banned in favour of more flexibility as to payment, working time, training regulations, examination etc. Even some trade unions concede, it would be wiser to stimulate the supply of training openings e.g. through tax credits rather than to punish enterprises with extra fiscal burdens.

Fourthly, the “quality Problem”:

The discussion on vocational training policies also addresses a number of qualitative aspects of the further development of vocational training. It concentrates on such issues as modernisation and diversification of vocational education and training, equivalence of vocational and general education, vocational support for women, expansion of continuing training, innovation in vocational training and gearing the dual system to the Single Market.

The objective in modernising vocational education and training is to react to rapidly changing demands with regard to skills needs in the economy, by creating new or adapting existing recognised occupations. Only new qualifications in growing fields of activity can safeguard old and create new training capacities, and cope with changes linked to structural transformations. The social partners are implementing the new classification of recognised occupations and an observation system for the early identification of skills trends is being established.

In fact a lot has been achieved. Yet, especially in the service sector new occupations and training regulations could still be pushed forward regarding the fact, that the service sector is a growing one.

Fifthly, the “lifelong learning complex”:

The 'lifelong learning' complex is included in the 'Forum Education' (11) set up by the Federal Ministry of Education and Research. It is to be treated as a central topic affecting all areas of education. In this connection, federal and Länder governments are planning a joint lifelong learning programme in the Federal and Länder Committee for Educational Planning and Research Promotion. Where we are standing, can be seen in chapter 3 Europe’s 6 messages.
Sixthly, quality control:

In order to establish transparency and to set quality standards the Ministry recently has instituted a “consumer watchdog” to “vet” continuing vocational training.

Programmes are to be tested by a special department of German consumer organisation ‘Stiftung Warentest’. In addition, a continuing vocational training (CVT) portal is in the pipeline. The German consumer organisation Stiftung Warentest’s special department with responsibility for education and training ‘Stiftung Bildungstest’ is to vet CVT programmes from July 2002 onwards. The tests mark the beginning of a campaign to assure and upgrade the quality of training in Germany. According to the federal minister for education and training, Edelgard Bulmahn, the department may develop into an independent foundation which would then also inspect the course provision of schools and universities. Some EUR 6 million has been earmarked by the federal government for this project over the next three years.

Independent evaluation is intended firstly to provide consumers with reliable advice through the maze of provision: over 35 000 providers delivering more than 400 000 programmes. Secondly, the tests are designed to sharpen the quality awareness of CVT providers.

The German Industry and Trade Advisory Board for Vocational Education argues that this is not necessary, pointing out that CVT providers have a vested interest in optimising and improving the transparency of their course provision. The advisory board regards the creation of an independent foundation for education and training as superfluous, in particular on the grounds that the diversity of programmes catering for different target groups cannot be seriously evaluated, and instead proposes CVT databases as an effective instrument for achieving greater transparency.

It is precisely with a view to this aim of creating greater transparency that the Federal Ministry of Education and Training intends to set up a portal to CVT databases on the Internet, by which it is to gradually become possible to consult the entire range of provision via a central address by 2004. EUR 1.3 million have been set aside for this project. Thirty leading German CVT databases intend to link up their programmes to this new 'InfoWeb CVT' so that users will be able to access the information they require immediately.

Seventhly, a framework law on CVT?

On the other side, the German Trade Unions Confederation (DGB) criticises the 'maze of continuing vocational training provision', the lack of transparency for users, an absence of clear quality standards at the level of providers and an insufficiency of quality criteria for full and part-time personnel. The DGB consequently presses for a framework law on continuing vocational training at federal level which would serve as the keystone for CVT structures, liabilities and monitoring bodies. It also wishes to see clarification of CVT funding and cannot tolerate the increasing shift of the cost burden to the employees' side in its present form.
The employers’ side and the chambers have repeatedly objected, arguing pro transparency but opposing regulation of a market, which operates efficiently with a very differentiated and customer minded supply side. Focusing the enterprises, not the individual, as a customer of CVT-offers, they emphasise their competence as customer and the self-purification forces of a free market. Competition will erase “black sheep” anyway, the say, better than any regulation whatsoever.
7. The “chemical” experience

7.1 Triggering off renewal

How are changes in vocational training promoted? What happens in the front line? Acting on this “battlefield” since about a decade in the German chemical industry, I will try to show, what made us “tick”. Remembering the criticism towards the dual system of vocational training (see chapter 6) in the political discussion on the one hand and the massive criticism coming out of the chemical enterprises on the other hand with more or less the same impetus, social partners in the chemical industry, the IG BCE - Mining, Chemical and Energy Industrial Union and the BAVC - German Federation of Chemical Employers’ Associations, were discussing the upcoming criticism, shortcomings and problems as well as suggestions of improvement, stemming right from our “basis”, the shop floor itself, the factories, the training departments and the works councils as “ambassadors” to the social partners. Discussions took place in our respective vocational training committees and we identified the laboratory occupations (chemical laboratory technician, biological laboratory technician and lacquer and varnish laboratory technician), then the production occupations (chemical technician, pharmaceutical technician) and, on the commercial side, the industrial clerk.

First of all, we checked the contents of the training regulations and found some “old stuff” that should be eliminated, but also quite a lot of new issues, such as new techniques, new scientific findings, new ways of operating processes and conducting business, contents on the fringes and interfaces of the occupations, that should be integrated. And, too, there was a lack in ICT, in social competencies, in work techniques, in “responsible care” and so on. Writing this down, we were shocked: teaching all the contents wished and needed would make for a training scheme of at least 5 to 6 years! This was, when we realised, that initial and further training and personal development must be coherent and we had to condense the core issues for the initial vocational training, keeping in mind the links to further vocational training.

We also realised, that we had to respect the various requirements of the enterprises, searching for “tailor made employees” with specific competencies. On the other hand, a state recognised occupation has to be comparable nation wide - at least to a certain extend. So the social partners were on a “knife-edge” walk between “professionality” and “enterpriseability”. Luckily the term “employability” came up, helping us to compromise. But this was the crucial point: as much common contents as unavoidably necessary and as much diversity and flexibility as possible.

At this point social partner experts came together to jointly discuss the settings needed and lining out a common proposal.

Then we had to solve the structural question: evidently there were three types of contents to deal with: we called them “integrative qualification units, mandatory qualification units and optional qualification units”. It should be noted, that we didn’t use the term “module” – this was a taboo then – but in fact we were modularising the training regulation – but always keeping in mind the holistic view, that in the end a chemical technician should be a real skilled worker but not a “module cripple”.

24
The integrative qualification units are to be imparted during the entire training period in close combination with the other units, and therefore had no time targets attached. The optional part should take place at the end of the training (about ¾ to 1 ½ year of a 3 ½ year time frame), allowing specialisation and so a smooth transfer into the prospective workplace. With certain limitations the enterprises (training departments) are free to mix the optional units as required in the respective factories and laboratories, and they can define the optional settings right before the beginning of the optional phase, so being very flexible and close to their “customer”.

When social partners have reached agreement on all of this, we went through the official renewal process within a record of around one year time. Major problems arose with the vocational school partner, because they came in trouble with their framework curriculum. Not only had they to switch from the old subjects to so-called “learning” fields but also to formulate “elective learning fields” as a counter part to the optional qualification units.

Clearly, the more flexible the regulations, the more need and pressure for co-ordination and timing at the face. This is the price to pay for enhanced freedom and flexibility.

What the social partners also had in mind, was a new structure of examination. Skip the unnecessary intermediate examination, which no one takes seriously anymore, because it doesn’t count for the final examination, and develop a so-called “stretched examination”. Why not, according to the new structure - test the mandatory qualifications, say, after 2 ½ years, when passed, and examine the optional qualifications at the end, dividing the risk for the candidate as well, because he now has “two shots” instead of one “final shot”.

Unfortunately, the vocational training act with its rigid examination regulations stood against it as well as, at first, the chambers as competent body, fearing “disconnected” modular training and modular examination (of each single module when passed) and, too, insufficient comparability of the tests. So, the “pure” solution could not be reached. Yet a complex and tricky compromise was found, coming into the direction of our initial proposal. Now we work under a “try – out – ordinance” in order to test the new regulation in a 5 years time – but it took us about 5 to 7 years time, to convince the officials to open up for this little step of progress and flexibility in examination (“Progress is a snail”, they joke in Germany). Hopefully, sooner or later a renovated Vocational Education and Training Act will then provide more openness and flexibility to satisfy our demands as customers, too.

7.2 Consequences for further training and lifelong learning

Consequently we can and will use the optional qualification units as “bricks” in the “further training wall” in a sense of lifelong learning. Those who were trained under the new regime can use further bricks as add-ons to broaden or deepen their qualification. Those having been trained under the old regime can use the whole set of new qualification units to update their skills and knowledge. Furthermore, social partners can easily attach new optional units, modify existing ones and set obsolete ones aside.
On the ground of the new chemical technician we now are working on the renewal of the “Chemie - Meister”, who is master foreman and supervisor in the chemical production.

It was more or less the same procedure an preparation phase as with the chemical technician – a bottom–up-process. As the role of the foreman has become more heterogeneous too (working in shift production, as calculator, cost controller and administrator, as high level science oriented chemical expert or as a maintenance specialist), we also will operate with a set of optional qualification units to meet the respective demands of the enterprises as well as of the employees. Again these qualification units can be used for further training of both, new and old regime foremen. Furthermore, master foremen with a bias to chemical science or engineering are eligible for studies at Universities of Applied Sciences or even Universities, thus opening the dual system and linking it to other career paths. On the other side, the opening of the system also means, that bachelors and masters of chemistry also can apply for jobs in the master foreman field as usual in other european countries, where something like the “German Meister” does not exist. At the same time, this opens up for European mobility. It will be another step to equivalence of vocational and general education.

7.3 The “Weiterbildungs-Stiftung” – Foundation for Further Training: an initiative in the chemical industry

Job-related further training in our understanding cannot be solely the task of the employers or the unions. Practical social partnership is a suitable approach for handling such a comprehensive task in an appropriate, efficient manner. For this reason, German Federation of Chemical Employers Associations (BAVC) and the Chemical, Paper and Pulp and Ceramic Workers Union (IG CPK) – nowadays the Mining, Chemical and Energy Industrial Union (IG BCE) – established a Foundation for Further Training (12) in 1993 as a foundation with legal capacity under civil law. The purpose of this Foundation is to provide services for job-related further training.

The Foundation’s funds were contributed by BAVC and IG BCE in equal shares. The projects are financed from the proceeds of the Foundation’s capital. However, public subsidies may also be accepted, or cost contributions may be claimed.

The appropriateness and importance of the idea of establishing the Weiterbildungs-Stiftung is demonstrated by the fact that a broad range of activities developed soon, and that trend-setting projects were started to meet the growing demands of the world of labour.

The Weiterbildungs-Stiftung is an institution that renders services to the companies of the chemical industry. Especially important is the transfer from big to small and medium-sized enterprises, which often do not have own training departments or research capacity. It supports them in their further training projects by developing further training concepts and additional training models. Special attention is attributed to current trends and political developments, e.g. lifelong learning. The performance of the further training measure itself is not in the responsibility of the Foundation. However, it may provide counselling and recommend suitable training institutions.
The fields of activities

Development of further training concepts and programs
Preparation of didactic material (films, texts, CD’s) made available to training institutions
Procurement of teaching personnel and seminar tutors
Development of vocational further training models
Counselling of companies and works councils
Publication of written material, organisation of meetings
Participation in international studies and their assessment

In accordance with its defined goals, the Weiterbildungs-Stiftung has worked out a number of model projects, verified the methodology, and developed and documented seminar types. It prepared training tools and didactic material which were used successfully. In performing these tasks, the Foundation could rely on competent institutions and consultants with long-term experience in science and its practical application. The results were made available to the companies in the chemical industry. Individual projects are described in the WBS "aktuell" information service which is published several times a year.

The subject areas and projects as well as the approaches for handling them include the following:

Working groups
New training methods for trainers in commercial subjects (modules for practical orientation and implementation aids for trainers)

Model projects
Innovative, interdisciplinary further training in the chemical industry (teaching of key qualifications; pilot seminar and trainers’ seminar)

Documentation
Computer-aided learning in the chemical industry (application tools and assessment criteria)

Pilot seminars
Personnel managers and members of works councils in joint discussion about group work

Concrete learning aids
English for chemical laboratory staff – triple pack for further training

One-day seminars
E.g. Total quality management – the solution to a new challenge
Workshops
Changing demands on laboratory work in the future
The new role of foremen in the chemical industry

International Issues
Participation in EU projects (for trans-national assessment and recognition of skills and qualifications of workers, especially in the context of new ways of organising work, quality management and organisation development)

Competence for Europe
Co-operation for the trans-national recognition of qualifications and qualification steps acquired

The concepts developed in the spirit of the Foundation are furthermore intended to serve as a model for the relations between the social partners in the chemical industry with respect to matters not affecting collective bargaining. Yet, this does not rule out that matters of further vocational training might be subject to collective bargaining in the days to come. But this indeed could be brought forward with respect to the joint achievements in the Weiterbildungs-Stiftung.

To be sure, payment according to our collective agreement is not linked to qualification, recognised or not, but to the actual performed activity. E.g. a professor of sociology working as a street worker in our scheme would be paid as a street worker a not as a professor. In our 13-level-remuneration-system (1=unskilled, 4=skilled with two years of (recognised vocational) training, 6=skilled with 3 or 3 ½ years of training, 13= top high skilled white collar worker/employee) a chemical technician, like other skilled workers would be in group 6, provided he actually works as a skilled worker. Would he permanently render minor activities, he probably would be in Group 3 or 4.

7.4 The BAVC’s further training institutions

CVT has been playing an increasing role in the chemical industry from the very beginning. In 1955 the German Chemical Industry Further Education and Training Institution was founded by BAVC, especially designed for CVT of foremen, trainers and (young) managers. Not only should they improve their professional skills and knowledge but also be trained in subjects like legal, economic, political and social affairs, in management techniques, communication and other “soft skills” like conflict settlement, motivation of employees, behavioural questions as well as IT and automation-technology, in the use of process control systems and so on.

To be closer to the customer, the regional chemical employers’ association subsequently developed own further training offers, either within the association or as special institutions.

For example, there are 3-level-courses - one basing upon the other - for master foremen, lasting one week each, and dealing with the subjects mentioned above. Around 60,000 foremen have passed these courses, thus forming a qualified “backbone” for a frictionless chemical production. Yearly updated contents ensure topic skills and knowledge.
In this way we try to make sure lifelong learning as an offer from the “supply side”.

7.5 Further training in the chemical industry: On the way to empirical evidence

As far as continuous vocational training is concerned the empirical evidence is rather narrow, especially on a sector base. In 1999, the social partners in co-operation with the Federal Labour Office’s Institute for Labour Market and Occupational Research carried out a survey called “Sector Analysis Chemical Industry”. One issue targeted at CVT. Some results:

- Only 7 % of the enterprises did not sponsor or lead further training steps
- 61 % did bear the costs and exempted from work
- 25 % only exempted from work
- enterprise expenses for CVT averaged around 1,5 % of gross wages and salaries
- many enterprises ( 41 %) expect rising sums and quotas for CVT, 57 % see no changes.
- 45 % see CVT as prime measure to cover future needs for skilled personnel, 33 % set initial vocational training number one

The survey also revealed interesting information as to the structure of future qualification requirements for both, training subjects and special groups of blue and white collar workers. This will inspire ongoing improvements in CVT.

Starting off this year, the social partner in co-operation with the Federal Institute for Vocational Training will conduct a 3-yea-survey titled “Further Training in the chemical industry” with 3 main targets:

- “inventory” of further training arrangements of training institutions or of sourced out training departments for chemical enterprises especially by checking all databases available
- Early detection and description of future qualification and training requirements, if possible using the results of other researches in this field and interrogating relevant experts
- Evaluation of both findings by comparing the present-day situation with the future requirements, and by that deriving concrete action to meet and to cover the revealed qualification and training needs.

The social partners by that jointly expect more reliable information in order to take concerted action, either by improving existing training issues or setting up new ones. Our Foundation for Further Training will be very helpful in this context.
8. Conclusions

A lot of issues have been discussed, others could only be touched, some had to be omitted. Some conclusions have been unfolded in the chapters above. So here is an effort to highlight the case of lifelong leaning by “headlines”:

1) Start early – never stop!
2) Strengthen pre-school education
3) Mind low achievers and high potentials
4) Make pre-school, school, initial and further vocational training and human resource development a coherent connecting system
5) The learner: self-directed, self-responsible and sovereign
6) Learn how to learn - direct to “blended learning”
7) Between freedom and regulation: the healing hand of subsidiarity
8) Make the system(s) transparent and permeable
9) Let further training be unrestricted
10) Set quality standards – but let the market work
11) Take care of clear competencies for all participants
12) Install a transparent and feasible funding system – according to the respective responsibilities
13) Improve empirical evidence – provide coherent statistical data
14) Make training regulations open and flexible
15) Don’t be afraid of modular training –but keep the holistic view
16) Modular training – modular examination!
17) Develop renewal from bottom up – keep in touch with the “frontline”
18) Set up an early detection system – identify future qualification needs
19) Consider flexible work and training arrangements
20) Assure participation of all individuals
Footnotes:


(2) Commission of the European Communities: commission staff working paper: A Memorandum of Lifelong Learning, Brussels, 30.10.2000

(3) Commission staff working document: Lifelong learning practice and indicators, Brussels, November 2001


(11) http://www.forumbildung.de

(12) http://www.wbs-wiesbaden.de