CONTINUING EDUCATION TRAINING PROGRAMS FOR THE PUBLIC SERVICE CONCERNING INFORMATION AND COMMUNICATION TECHNOLOGY

COUNTRY REPORT:

FEDERAL REPUBLIC OF GERMANY

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Outline

Chapter 1
Framework

1   Structure and Size of Public Administration
2   The Continuing Educational System in General

Chapter 2
Continuing Education in ICT-Related Matters in Particular

1   Description
2   Evaluation
3   Explanation of Findings
4   Some Proposals

Table of Contents

Summary

Continuing eduction (CE) of the public service is pronounced in the Federal Republic of Germany. It is the purpose of chapter 1 to show this.

CE is a fact of administrative life. Competences have been defined, and they are observed. Training institutes are busy. CE-commissions have released guidelines and skeleton plans. It is the obligation of the public servant to participate in CE-programs as it is the duty of the employer to provide for respective opportunities.

CE "hits" today seem to be: individual working techniques, rhetoric, conference moderation, planning and decision-making, budgeting, organization, leadership, or citizen relations. We encountered some remarkable EDP-courses, too. But in general, matters related to information and communication technologies (ICT) are still handled rather timidly.

Chapter 2 is intended to describe and assess CE in ICT-related problems in particular. Also some hypotheses of our findings and a few suggestions are presented.

Apart from quite a few "pearls" we came across ***it seems to be safe to say that the supply of ICT-related CE-subjects is by no means sufficient.*** Not only should there be more courses which address ICT, and more public servants participating. As far as ICT ***is*** a subject of CE-programs, it is handled in a more or less additive way. However, just as ICT is about to penetrate almost every part of public administration, it should be interwoven with old-established CE-subjects. Especially, courses in areas such as organization, planning and decision-making, citizen/administration relations, or individual working techniques, definitely should take ICT into account.

One of the reasons for some deficiencies we observed might be that, for a long time, EDP has been considered to be just a technical affair and therefore presumedly could be left to the respective specialists. Such an attitude of administrators might have been nourished by a lack of "technical culture" which roots deeply in our tradition. For ages, Latin, the fine arts, history, or literature have been in much greater esteem than "just" technical problems. By now, however, it becomes more and more apparent that ICT is much more than just technique. ***The bearing ICT has or is going to have on public administrations will have the rank of an administrative reform.*** For ICT is going to influence almost every sphere of action, especially the tasks, the organization, and the personnel of public administrations. However: who else but the public service has greater familiarity with the effects that ICT could or should have on administration? Who else has the competence to decide about the

direction ICT-use is going to take? ***ICT, after all, should not be a revolution surrogat which annuls existing hierarchies of command.*** If this is so, then there is only one way to prepare the public service for its responsibility - training.

   It belongs to the schools and institutes of administrations' tasks to disseminate this assessment of ICT and to raise the demand for the respective CE-programs.

Chapter 1

Framework
1 Structure and Size of Public Administration

1.1 Structure of Administration

Administration in the Federal Republic of Germany shows great variety and complexity. The Basic Law of 1949 constitutes three organizational principles: ***federalism*** with states as members of the federation having a sovereign statepower of their own; ***local government*** with local authorities and counties as the two levels; ***separation of powers*** (legislative, executive (government and administration) and judicial powers as separate institutions).

Administration is normally in the hands of the state or the local authority. Activities of administration, however, are mostly controlled by universally applicable federal laws.

The general structure of public administration in the Federal Republic of Germany is distinguished by three basically independent levels:

- 1 federation
- 11 states ("Länder", the larger ones being subdivided into 26 government districts all together)
- 8,738 local governments, subdivided into 237 counties ("Landkreise") and 8,501 local authorities ("Gemeinden"); the later sub-divided into 91 county boroughs ("kreisfreie Städte") and 8,410 local authorities belonging to counties ("kreisangehörige Gemeinden"); the latter subdivided into 2,376 uniform local authorities ("Einheitsgemeinden"), 8 local authority-free areas, and 6,026 local authorities ("Ortsgemeinden") belonging to 1,041 administrative associations ("Verwaltungsgemeinschaften")[1]

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[1] State: January 1, 1980. For reference and more details see Wagener 1983, and Württembergische Gemeindezeitung (Gazette of local authorities) 1980, p. 491.

1.2   The Public Service

The public service is, to a large extent, uniformly governed by federal regulations. Articles 75 and 74 a) of the Basic Law give the federation the competence for skeleton laws concerning the legal status of all public servants employed by states and local governments, and the concurrent competence concerning salary and pension of the civil servants.

The public service of the Federal Republic of Germany consists of ***three groups***: civil servants ("Beamte", generally with life-time tenure), salaried employees and workers (both without life-time tenure). Only the first two will be considered in this paper. Article 33 of the Basic Law rules that public tasks of a sovereign nature have to be preserved for civil servants, and their legal status must reflect the so-called traditional principles of the professional civil service. This means that their relationship with the employer has to be based on public law (whereas the employment of salaried employees depends on contractual arrangements based on private law) that they have no right to strike (whereas salaried employees do) that they have life-time tenure normally (whereas salaried employees don't) that their legal position, including pay and pension rights, are not part of an employment contract (as for salaried employees) but of an Act of Parliament that they in particular have to restrain from partiality, defend the democratic order, and promote the well-being of the whole community.

In practice the contents of these different legal employment conditions have become gradually similar. Nevertheless, fundamental differences remain. Salaried employees are normally hired for clearly defined official posts. Civil servants, on the other hand, are subject to the career principle. All posts of the civil servants are divided into ***four standard career structures:*** the basic, clerical, executive, and higher service (in accordance with the four main qualification levels of the German educational system). Each career structure consists of five grades on a rising pay-scale[2].

In this paper I will concentrate on one of our states: Baden-Württemberg. The CE-situation here seems to be representative for the German public administration in general. This state has 1111 local authorities and 44 counties and county boroughs. The population of the public service in Baden-Württemberg (only full-time

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[2]   For reference and more detail see Siedentopf 1983.

public servants and without employees in hospitals, social security, and public enterprises) as of June 30, 1983 was *(in thousands)*[3]:

	Admini-stration	Civil servants	Salaried employees	Workers	Total	Per 10000 inhab.
State	138	44	10	193	207	
Local	19	51	31	101	109	
Total	157	95	41	294	316	

2 The Continuing Educational System in General

2.1 Organization

2.1.1 Who is in Charge?

At *federal level*, as mentioned before, according to Article 75 of the Basic Law the Federation has the right to define legislative guidelines for the legal status of all public servants employed by states and local governments.

At *state level* each department itself is responsible for the planning and organization of those CE-programs referring to *sector-specific* administrative aspects in its domain (like tax administration; construction; social, police, water, survey, or agriculture administration; etc.)[4]. Normally, the departments have no full-time CE-section; matters of CE are handled by the personnel affairs section.

All CE-programs referring to topics of a general or *sector-overlapping* nature (like leadership and organization, planning and decision-making, rhetoric, citizen relations, foreign languages, or finance, etc.) fall into the competence of the Department of the Interior. The same holds true for CE in sector-specific subjects of general administration like personnel administration, budgeting, registry (filing), correspondence, switchboard, or organization[4].

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[3] Statistisches Landesamt 1984.

[4] See also the upper part of Figure 1.

In the Department of the Interior, a special section "education and training" has been installed (some five employees). Here, a CE-Skeleton Plan has been worked out, an annual CE-program is planned, applicants are allocated to the different courses, and the realization of the courses is organized.

All departments' section heads involved in CE form an inter-departmental working group which meets irregularly, e.g. in order to coordinate the annual CE-program.

As part of its technology-related policies the State Government of Baden-Württemberg has appointed a Vocational Training Commission in which also the departments participate. A report was delivered in 1984[5].

Above state level all heads of the sections "education and training" in Federal and State Departments of the Interior form a commission which meets from time to time in order to discuss questions of general interest.

Local authorities and counties have the independent right to be responsible for personnel and organization. This includes CE.

2.1.2 Regulations

2.1.2.1 Regulations Above State Level

(1) The *Federal Civil Service Skeleton Act* ("Beamtenrechts-rahmengesetz") states in § 36: the civil servant must fulfill his profession with full devotion. This paragraph is interpreted as *obligation* of both, civil servants and employers, to take care of CE.

(2) The *Federal Contractual Agreement for Salaried Employees* ("Bundesangestelltentarifvertrag (BAT)"), concluded by the federal, state and local employers and by the two public service trade unions, does not mention CE.

The *Vocational Education Act* ("Berufsbildungsgesetz"), how-ever, which regulates the affairs of salaried employees and workers and is a skeleton law (according to article 75 Basic Law) as far as the public service is concerned, covers CE and in § 3 points to its importance.

(3) The above mentioned Commission of Section Heads involved in CE has worked out *General Principles for CE in the Public Administrations of the States* (final session February 2, 1977 in Speyer). They have been passed as recommendations to the states by the

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[5]   Continuing Education: Challenges and Opportunities, Stuttgart 1984.

Standing Conference of the Heads of State Departments of the Interior, June 23, 1977 in Kiel.
These principles

- stress the importance of CE in a rapidly changing world
- define goals (among others: ability of independent learning) and types of CE (introductory, adapting, and promotive CE, and for each: CE in sector-specific fields of administration ("fachbezogene Fortbildung") and in general aspects of administration ("fachübergreifende Fortbildung")) (for definitions see 2.2 below, 2.1.1 above, as well as the upper part of Figure 1)
- state the *obligation* of all public servants to participate in introductory and adapting CE, as well as the obligation of the employers to provide for the respective opportunities
- propose the amount of time to be devoted to CE (e.g. for adapting CE: five days a year for managers, five days in two years for public servants carrying out complex and rapidly changing tasks, five days in three years for the others)
- discuss organization, personnel resources, teaching methods, and evaluation of CE
- stress the importance of coordination of personnel planning on the one hand and CE on the other
- as an enclosure, give examples of topics and teaching goals of adapting CE-programs in the areas of leadership, organization (here, the organization of EDP is mentioned among others), planning and decision-making, and administration/citizen relations.

(4) The Standing Conference of the Heads of State Departments of the Interior in its 1977 Kiel session also agreed upon a *Skeleton Plan for Introductory CE.* It is aimed at the three year period of probation for beginners in the higher service. The subjects to be covered are listed (e.g., administration science, state and economy, public finance, statistics, history, political and social science).

These contents are recommended to be dealt with in three ways: a yearly two-week seminar, a monthly half-day working group session, and individual self studies based on written material (which has not been provided yet, however). Regarding the seminars, some five hours of the six weeks/120 hours (or some 4 percent) are recommended for "auxiliary means of public administration, e.g. EDP".

2.1.2.2   Regulations at State Level

(1) The ***Civil Servants State Act*** ("Landesbeamtengesetz") in § 73 repeats the direction of the Federal Civil Service Skeleton Act . The ***State Career Structure Decree for the Civil Service*** ("Landeslaufbahnverordnung") in § 59 specifies this obligation of each civil servant to participate in CE-programs and to personally improve his knowledge base in order to keep up to date with the demands of the respective career. It is the duty of the departments to promote and to regulate CE, also to further those civil servants who have enlarged their knowledge and abilities through CE (there is no legal claim to become promoted, however).

(2) Both, the ***Local Authorities Act*** ("Gemeindeordnung") in § 56 and the ***County Act*** ("Landkreisordnung") in § 46, state the obligation of local administrations to promote the CE of their employees.

(3) The ***State Staff Council Act*** ("Landes-Personalvertretungsgesetz") regulates the staff councils' right to co-determine in general matters of CE (§ 79) and to participate in the selection of CE-participants (§ 80).

(4) ***Principles of the State Government for CE in the State Public Administration*** have been passed by the cabinet April 25, 1979[6]. They lean upon the General Principles recommended by the Kiel Conference in 1977, but are more specific regarding the division of labor between the various departments and agencies (superiors are declared responsible for CE of their employees; CE in sector-specific aspects of administration falls into the competence of the respective department; the Department of the Interior is responsible for CE in general or sector-overlapping matters of administration as well as in sector-specific topics of general administration; each department must have a CE-Skeleton Plan and a yearly CE-program; their coordination is prescribed; among others).

(5) The Department of the Interior released its ***Skeleton Plan for General Official CE in the State Administration*** on May 11, 1979[7]. For each of the three different types of programs (introductory,

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[6]   Gemeinsames Amtsblatt No. 20/1979, pp. 457-462 (Joint Official Gazette of Departments and Government Districts).

[7]   Ibid., pp. 462-492.

adapting, and promotive CE) it contains target groups, course contents and duration, teaching goals, and the number of courses per year. An updated version of this first skeleton plan is expected.

As far as *introductory CE* is concerned, the current Skeleton Plan provides only for beginners' courses in the higher service (for the three lower service groups, pre-service education is supposed to have covered the relevant subjects already). Largely in accordance with the Skeleton Plan released by the Conference of the Heads of State Departments of the Interior, seven courses per four days each are provided for: introduction to public administration, rhetoric, organization and leadership, planning and decision-making, budgeting, EDP, and environment protection. Here, ICT-related matters, in the Skeleton Plan of Baden-Württemberg, have been given a remarkable weight.

On the one hand the plan for *adapting CE* contains courses for public servants with leadership responsibility, differentiated in programs for top, middle, and lower management. Subjects are leadership, motivation, behavior, performance evaluation, rhetoric, budgeting and finance, planning and decision-making. For middle managers (section heads and heads of smaller agencies) a two-day EDP-course is provided for. On the other hand, the adapting CE-plan contains programs for the clerical, executive, and higher service (administrative law, budgeting, organization, citizen relations, economy, self-management etc. being the subjects). Here, the executive service is planned to participate in courses which, among others, deal with EDP. Finally, there are programs for specialists in general administration matters such as personnel administration, organization, budgeting, registry (filing), or correspondence. Here, only for the last two groups technical topics are mentioned.

Promotive CE is aimed at supporting members of the clerical and executive services who have been selected for promotion to the next higher career group, and for public servants who have reached a middle management position. Now and then, a few ICT-related topics are mentioned in these courses planned.

(6) Each year the Department of the Interior issues its program *General Official CE in the State Administration of Baden-Württemberg*. The other training institutes (like the Academies for Administration and Business, the Data Center Baden-Württemberg, etc. (see 2.3 below)) publish their CE-programs yearly, too.

2.1.3   Decision-Making

Planning of the CE-programs seems to be more or less incremental. Courses which proved to have a high demand remain in the program. Normally, courses are evaluated by the participants. Suggested new subjects are checked back with the other departments first, in order to make sure that there will be sufficient demand. The staff councils participate in the planning process.

Regarding the planning of CE-programs in ICT, a special Commission for EDP-Training ("KOMAF") is to mention. Its members are appointed by the Data Center, the Academies for Administration and Business, the EDP-committee of the State departments ("KA-EDV"), and by the Local Government Association for EDP ("KOAG"). The purpose of KOMAF is to coordinate CE-activities between the Data Center as a newly established institute and the traditional CE-institutes (e.g. the Academies for Administration and Business).

Public servants planned for participation in CE-courses are selected by the sections for personnel affairs in the respective departments. CE-needs and aptitudes of the applicants are the criteria. Again, the staff councils participate in this process. Selected participants are reported to the Department of the Interior which allocates the available course seats. As far as introductory and promotive CE is concerned, there is a close relation to personnel planning. No participation in those programs is possible without approval of the section head for personnel affairs.

2.2   Programs

The General Principles passed in Kiel 1977 proposed the following CE-programs, the definitions of which have come to be widely accepted in the Federal Republic of Germany.

Introductory CE is to supply beginners in public administration with the knowledge, abilities and skills which had not been provided for by pre-service training but are necessary for professional administrative work.

Adapting CE is to update knowledge over time and to preserve and improve the public servants' qualification and mobility. It is the "back-bone" of CE.

Promotive CE is to prepare suitable employees to take over higher qualified or leading positions. This can include promotion to the next higher career group.

(For definition and examples of sector-specific and sector-overlapping CE see 2.1.1 above and the upper part of Figure 1.)

2.3　Training Institutes

A variety of training institutes is to mention (see Figure 1). The most important are introduced briefly, here.

At *state level* the Department of the Interior itself organizes and realizes CE-courses although a dedicated CE-academy (as mentioned in the Principles of the State Government of 1979) has not yet been installed.

Part of the courses, especially those for the clerical and executive services, is realized in cooperation with the 4 Academies for Administration and Business ("Verwaltungs- und Wirtschafts-akademien") in Freiburg, Karlsruhe, Mannheim, and Stuttgart. There are some 70 independent CE-institutes of their type in the Federal Republic of Germany; they are supported by local governments and chambers of commerce.

For some of its programs, especially those aimed at the higher service, the Department of the Interior utilizes courses offered by the Federal Academy for Public Administration ("Bundesakademie für öffentliche Verwaltung") or by the Post-Graduate School of Administrative Sciences Speyer.

The Data Center Baden-Württemberg ("Datenzentrale") as a State-Local corporation also has a role to play in carrying out the state's CE-programs. According to § 2 of the Data Center Act ("Datenzentralegesetz"), participation in the training of (state and local) public servants belongs to its tasks.

For CE in sector-specific subjects, the departments rely on a variety of special training institutes (like Police, Finance, Law, Forest, Teacher Academies, not listed in Figure 1).

At *local level* the four Academies for Administration and Business and the Data Center again have to be mentioned as important CE-institutes. In addition, the Association of Local Authorities ("Gemeindetag") maintains a School of Administration which offers a CE-program. The Society for Local Government Rationalization ("KGSt") sustains a nation-wide CE-program which is also open to participants from Baden-Württemberg. And finally the Department of the Interior is to mention which offers course seats to local administrations, but only as far as they are not needed for the state's public servants.

2.4　CE-Budgets

1983, the State of Baden-Württemberg spent some 14 Million Deutschmarks (some 6.2 Million US$) on CE. The share of the Department of the Interior was 10 percent or 1.4 Million Deutschmarks.

2.5   Financing

As far as the CE-program of the Department of the Interior is concerned, normally this department bears all course and accommodation costs. The participant's department or agency only has to pay for travel costs. In case the Department of the Interior utilizes CE-courses offered by other institutes, it pays the fee.

The Data Center, the Academies for Administration and Business, the Society for Local Government Rationalization and so on, recover their expenditures by course fees charged to participants or to their employers.

Chapter 2

Continuing Education in ICT-Related Matters in Particular
1 Description

1.1　　　Special Regulations for ICT-Related Training

(1) Most important and remarkable are here the ***Guiding Principles for EDP-Training in Public Administration*** ("Rahmenrichtlinien für die DV-Aus- und Fortbildung in der öffentlichen Verwaltung"). This is a training concept which is in existence since 1973 and which has become widely accepted in the public sector of the Federal Republic of Germany. The Guiding Principles have been worked out and recommended by the Cooperative Committee EDP-Federation/States/Local Administrations ("KoopA-ADV"), consisting of the Office for EDP-Coordination at the Federal Department of the Interior, the EDP coordinating section heads of the states, the Federal Association of the Central Associations of Local Administrations ("Bundesvereinigung Kommunaler Spitzenverbände") and the Society for Local Government Rationalization ("KGSt")[8].

The most recent updating of these Guiding Principles has been released in 1981[9]. Already in 1973, however, they proceeded from the assumption that there will be an increasing number of people engaged full-time in computing and who therefore require a first-class professional training, and that - in addition - in the future every (!) public servant must have a basic knowledge of EDP. The training concept is a modular plan of training courses. It contains some 50 modules, each having a detailed description of teaching goals and subjects.

Mainly, the Guiding Principles aim at training EDP-specialists, the three target groups being application programmers, application

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[8]　For more details about the EDP-organization in the German public administration see Reinermann 1983.

[9]　See Bundesanzeiger No. 95a, May 22/1981 (Official Gazette of the Federation).

organizers (EDP-specialists who transform the automation needs of an EDP-user into programmable specifications), or machine operators. The majority of the 50 modules, therefore, falls into ***"Professional Training in Data Processing"*** as one of three broad module groups. The study necessary in this case lasts eight to twelve months.

Another broad module group is named ***"Basic Training in Data Processing".*** It offers a four to five week curriculum, the subjects being introductions to "Data Processing Technology, Data Processing Organization as well as Techniques of Planning and Working". On the one hand, this module group furnishes the entry qualifications required for the DP professional training. At the same time, however, it is aimed at training the non-EDP-specialists, named "Other Target Groups" by the Guiding Principles. This second module group offers knowledge necessary to promote understanding of automation problems and to enhance communication between the regular public service and EDP-specialists.

A third broad module group is called ***"Continuing Professional Training in Data Processing"*** and, among others, offers user training in program packages.

In the context of this paper, concentrating on CE, only the last two module groups are relevant.

The Cooperative Committee EDP has recommended that the Guiding Principles be applied in CE of the public service. The Commission for EDP-Training ("KOMAF") has agreed to this recommendation. The Data Center has proposed a division of labor for this kind of CE in Baden-Württemberg (which of the various training institutes should be in charge of which of the teaching modules?) and has developed teaching materials.

(2) Only recently the Working Group Informatics and Training for Public Administration (a subgroup of the German Informatics Society) has published a comment on the role, ICT should play in the training of the public service[10]. Because of the fact that ICT is related to most aspects of public administration, it is suggested that every public servant, not just those who handle ICT-equipment, should have a solid knowledge of the role ICT is able to play.

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[10]   In: ÖVD/Online (Public Administration and Data Processing), No. 6/1984, pp. 101-102.

1.2 Programs

Subsequently the programs of the various training institutions are described following the order of numbers attached to them in Figure 1.

1.2.1 Department of the Interior

In 1983 Baden-Württemberg's Department of the Interior took care of some 220 CE-courses with some 5000 participants altogether. Since then the introductory CE-program for beginners in the higher service, diverging from the Skeleton Plan and due to financial restrictions, has been reduced to 4 instead of the usual 7 courses. Besides other subjects a full week of EDP-instruction has been sacrificed. Topics like rhetoric, behavior, budgeting and finance, planning, individual working methods, organization, and conference moderation remained.

Those are also the subjects dominating the area of adapting CE. Here, it is remarkable that even courses like "individual working techniques" or "economy in public administration" do not cover ICT. There are, however, ICT-related courses among the adapting CE-programs. There is a fullfledged three-day EDP-course, offered three times a year to the higher service and twice a year to the executive service. It covers topics such as computer technique, DP organization, new developments of ICT (personal computers, word processing, videotext and the like), ICT impacts on society, DP economy, or privacy. Also, a one day course "New Office Technologies" for all employees of the Department of the Interior has been offered.

The promotive CE-program for the higher service relies on four course weeks offered by the Post-Graduate School of Administrative Sciences Speyer. They contain some three days of ICT-instruction. A fifth week, fully dedicated to ICT and aimed at highlevel administrators is offered by the Speyer School twice a year since spring 1985. On the other hand, the Department of the Interior's training program for civil servants who are going to be promoted from executive to higher service does not mention ICT yet.

1.2.2 Academies for Administration and Business

Among the leading training institutes are also the four Academies for Administration and Business. As far as they address public administration, they offer programs in adapting CE, both in sector-specific subjects (as construction, public utilities, social administration, town-planning, auditing, etc.) and in sector-overlapping subjects of general administration. Only the latter ones are relevant here. Those seminars which are arranged on behalf of the Department of the Interior have been dealt with already in the context of the above paragraph 1.2.1.

One of these Academies' course groups consists of seminars carried through exclusively for individual local governments. It is noteworthy that even programs titled "City Hall Management" or "Rational Work Techniques" do not cover ICT, however.

Another group is called Mayor Seminars, partly carried out on behalf of the Town Association ("Städtetag") and the Association of (smaller) Local Authorities ("Gemeindetag"). Here, besides topics as motivation, rhetoric, conference moderation, public relations, individual working methods, citizen participation, etc., two one-day seminars on "New Information Technologies" have been arranged, among the subjects being: benefits of ICT for Local Authorities, demonstrations of interactive videotext and cable TV networks, the plans of the Federal Post Office regarding the laying of cables, or judicial and political problems.

Seminars for Division Heads and other leading administrators constitute another course group. Here, a four-day seminar "Introduction into DP-Technique and DP-Organization" has been carried out. It represents the module group "Basic Training in DP" as recommended by the above mentioned Guiding Principles (computer technique, DP-organization, economy of DP-applications, privacy, the status of EDP-applications in state and local administrations of Baden-Württemberg). Further, a two-day seminar on "Automated Word Processing in Public Administration" has been carried out. Finally a two-day seminar "DP for Heads of Administration in Hospitals and Public Utilities" is to mention (in cooperation with one of the Regional Computer Centers).

To take the Academy for Administration and Business in Stuttgart as an example: here in 1983 some 80 seminars with some 1700 participants in the field of adapting CE for the public service were realized in total.

1.2.3 School of Administration of the Association of Local Authorities

The School of Administration of the Association of Local Authorities carried through some 180 courses with some 6600 participants, in 1983. Of relevance for this paper is the two-week seminar "Introduction into DP-technique and DP-Organization" (again, identical with the module group recommended by the Guiding Principles, but aimed exclusively at public servants in divisions for organization, auditing, and central services). Another two-and-a-half-day seminar, intended for leading general administrators in local governments, devoted one-half day or 20 percent to new technologies and to word processing.

It is remarkable, however, that neither the two-and-a-half-day introduction seminar for lately elected mayors nor the seven-day seminars in the so-called "Mayors Weeks" take any notice of ICT (the main topics here are local administration law, public relations, self-confidence, rhetoric, public finances, city hall/citizen relations). Also a three-week introductory course for lately appointed salaried employees does not pay any attention to ICT (from seven subjects areas covered, five represent various aspects of law).

1.2.4 Data Center Baden-Württemberg

Since its foundation in 1970, the Data Center Baden-Württemberg has been very active in the EDP-training of public servants. In 1983, it carried out some 60 seminars with some 1000 participants.

One set of courses introduces local public servants into software packages, offered by the Regional Computer Centers (EDP-use in personnel administration, in citizen registration, in budgeting and finance, etc.). These seminars deal with the content and capacity of those application programs only and are meant for managers and employees of (future) user departments. (For introductions into the handling of those software packages see 1.2.5 below.)

Another set of seminars offers sector-specific CE for EDP-specialists (it is interesting to note, by the way, that these addressees, in the terms of the Data Center, are called "insiders", whereas public servants in the user departments are the "outsiders"). Operating systems, data base systems, software engineering tools and the like are the main subjects, here.

Finally, the Data Center offers a few seminars of a more general nature. Among the topics are interactive videotext, overview of office automation, or cooperation of DP specialists and user departments.

1.2.5 Regional Computer Centers

There are 9 Regional Computer Centers in Baden-Württemberg, the two computer centers of the cities of Stuttgart and Mannheim included. They are mainly in charge of courses which have the purpose to introduce application software into departments and to teach their handling.

1.2.6 Society for Local Government Rationalization

The nationwide offered CE-programs of the Society for Local Government Rationalization ("KGSt") are, of course, also available in Baden-Württemberg. Besides seminars like organization, budgeting and finance, statistics, cost accounting, conference moderation, project monitoring, and personnel management, the 1983 program contained some interesting ICT-related courses: ICT in Local Government (a one-week seminar covering office automation, information management, network communication, word processing, computer output to microfilm, DP planning etc.), automation and auditing, organization of word processing, design of EDP-forms, or privacy in local governments.

The number of participants from Baden-Württemberg was not available.

2 Evaluation

Reactions of course participants proved to be hard to get. Normally they do fill in an evaluation questionnaire after completing a course. The ones we were able to look at seemed to be somewhat vague. It is

interesting, however, that quite a few participants, asked which topics they thought should have been given higher importance, pointed to EDP.

The following reflects the evaluation of CE-programs for the public service in the state of Baden-Württemberg by this country report's author from the ICT point of view.

2.1.   Well-Organized System of CE

CE-efforts in general appear to be quite remarkable. The overall impression is that organization and planning of CE-programs are well reasoned out. General Principles have been released by the Conference of Heads of the Departments of the Interior; these and the CE Principles of the State Government of Baden-Württemberg as well as the Skeleton Plan of the Department of the Interior - they are all applied in practice. The importance of CE for a well functioning public administration has been recognized clearly. Well designed and frequented CE-programs are a fact in State and Local Administration of Baden-Württemberg.

CE is a visible and accepted part of public administration.

The efforts dedicated to EDP-training in particular, too, are remarkable. Here also, a nationwide organization exists, guidelines have been worked out and have come to bear in practice. As early as 1973 the significance of EDP-knowledge for each (!) public servant has been understood.

It would probably not be an exaggeration to call the CE-programs found "systematic and effective". And this applies, without doubt, also for the other federal states and the federation.

2.2   Early Switch Towards CE in Administrative Matters of ICT

It is interesting to note that at the very beginning of CE-activities in the fields of EDP, the long-established training institutes (e.g. the Academies for Administration and Business) soon claimed their responsibilities for the general, non-sector-specific aspects of EDP-training. One can agree with the resulting division of labor, leaving to the Data and Computer Centers more or less the training in technical aspects of EDP. Let us look at the "Academy for Administration and Business of Württemberg" at Stuttgart as an example: in the early seventies it annually carried out some 20 to 30 basic EDP-courses, established on the grounds of the above-mentioned module group Basic Training in Data Processing. It is questionable, however, whether the traditional training institutes have exploited this

opportunity of being in charge of the administrative aspects of EDP-training to the highest extent possible, later on.

2.3 CE on ICT has not yet Succeeded

Although we have found some fine "pearls" among ICT-related CE-courses, it seems to be safe to say: **ICT is not yet "in".** As a reminder and for your memory: this report solely treats a) general or sector-overlapping subjects as needed by any employee beyond the knowledge about the tasks assigned to him, and b) sector-specific questions of general administration as dealt with by divisions for personnel, organization, finance etc. Sector-specific CE of ICT-experts, on the other hand, is *not* our concern.

The main areas of concentration in today's CE-programs are clearly: leadership and management, administrative behavior, rhetoric, individual working methods, conversation and conference moderation, planning and decision-making, organization, budgeting and finance, or economy in public administration.

Thus, compared to the importance which ICT already has for public administration today, CE seems to be dragging behind - let alone the future influence which ICT is expected to have. The current CE-concepts seem to be rather conservative whereas teaching, as a future-oriented activity, always should be somewhat avantgardistic.

2.4 CE-Principles and Skeleton Plans Need Updating

By now, the General Principles (1977), the Principles of the State Government of Baden-Württemberg (1979), the Skeleton Plan (1979), and the Guiding Principles (1973, latest actualization 1981) need some up-dating. In a rapidly changing environment of public administration the world of CE must be open for change as well. *We need standards for general ICT-related CE-programs of the same quality that distinguish the Guiding Principles* for training of EDP-specialists by the Cooperative Committee EDP, 1973, or the General Principles of the Standing Conference of the Ministers of the Interior of 1977.

2.5   ICT-Courses without Adequate Connection to Traditional Training

In the eyes of CE-program designers, ICT still seems to be something strange and special which best is left to special courses. Irrespective of the fact that quite a few of these courses have high quality, ***ICT should be interwoven with the old-established CE-subjects***, just as ICT more and more penetrates almost every part of public administration. Especially, courses in areas as organization, planning and decision-making, leadership, economy in public administration or individual working techniques as well as Mayor Seminars should integrate ICT.

2.6   ICT-Courses put too much Emphasis on Technical Aspects

Regarding the contents of ICT-related courses, technical aspects seem to be dominating. How systems work and how they have to be handled, receives higher attention than how they can be managed. ***CE-curricula resemble, as far as ICT is covered, computer science curricula*** more than information systems curricula. However: how to master (not just to use) ICT? How to really design (not just to adapt) the departments' information system in regard of the new opportunities opened up by ICT? Those non-technical aspects of ICT deserve a much larger share of CE-programs; this goes, the more ICT penetrates into the office world, for all administrative levels down to the operating employee. However, strategic thinking, systems thinking, to master innovation, true design - these are seldom explicit teaching goals today. The same applies to the use of information as a resource or a product, to which ICT finally contributes. How to find and to exploit information with the support of technology stands too far in the background compared to the functioning of EDP.

2.7   Underestimation of Emotional Teaching Goals

Also, affective or emotional teaching goals are somewhat underestimated. Especially in a country like the Federal Republic of Germany where much of the public opinion is at least ambiguous with regard to ICT, this seems to be an important observation. ***Public servants*** to whose tasks it belongs to manage and control ICT, to define their departments' requirements, to utilize the ICT-potential for

the improvement of public administration, and to implement ICT-driven change, ***should have an attitude towards technology which is based on knowledge and personal experience***, not on feelings alone. However, it must be conceded that the attitudes towards ICT inside the public service and the high degree of administrative automation are in clear contrast to the general public opinion which is often negative.

2.8   Personal Handling of ICT is Underrepresented

In this context we noticed that there was almost no course which provided the participants with hands-on experience in handling computers or other technical equipment (apart, of course, from the training of users in those program packages furnished by the computer centers). ***Computer literacy in the sense of Luehrman[11] is not yet widespread*** although there is some PC-use in CE-courses. Personal experience of this kind, however, seems to be very helpful in order to raise a public servants' self-confidence when confronted with machines, EDP-experts, and computer output. Given today's level of ICT, this is mediated relatively easily, by the way (for example with PC-systems suited for public administration).

2.9   Higher Management Levels are not Sufficiently Reached by CE

To reach top managers and politicians with CE-courses looks like a very difficult problem. This is regrettable because they are the ones who should take the initiative in utilizing the new technological opportunities for the improvement of public administration. And again, without relevant knowledge, this is not to be expected. This fact, in addition, provides the subordinates with excuses like this: "We ourselves would be willing to redesign the given information system of our department - but we cannot interest our superiors!" However***, to meet administrators ranked higher than section heads in CE-programs, still is more the exception than the rule.***

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[11]   Luehrmann 1981.

2.10 Training of EDP-Experts in Administrative Subjects is Missing

We have not found even a single CE-program aimed at teaching ***EDP-specialists*** in matters of public administration - the world they are to serve, after all. Of course, one has to admit, on the one hand, that quite a few of the computer personnel used to be public administrators before they came to EDP, often educated for the elevated public service. On the other hand, technology as well as users' interests change fast nowadays. Furthermore, a certain bias of ICT-specialists in data processing and computer centers cannot be excluded. Therefore, internal training offered by these institutions for their personnel is worthy of recognition, but does not suffice. Special training courses for members of the "DP-infrastructure" would be more effective.

2.11 EDP-Specialists as Instructors Influence Curricula

Very often EDP-specialists (e.g. members of the Computer Centers) are the main teaching resource in ICT-related CE-programs - mainly because there are not enough alternatives. This, in turn, influences the language used, the topics addressed, the prerequisites asked for, and the way problems of an obvious political nature like "decentralization versus centralization" are handled.

2.12 Coordination of Adapting CE and Personnel Planning to be Ameliorated

Whereas coordination of CE and personnel planning seems to work in the areas of both, introductory and promotive CE, it could be improved with regard to adapting CE (which is the biggest part, nevertheless). E.g., we have found no program aimed at giving those departments or sections a special training which are about to redesign their information systems or to install new ICT-equipment (Project Seminars). On the other hand, individual CE-programs for single local governments or state departments are quite common, the main subjects being citizen/administration relations or individual working techniques, however. Especially before and during the readjustment of a public agency's information system, individual project seminars could be of help. This is even more so, the more intensive "information management" is done by each authority and the more, therefore, individual concepts for automation are to be expected. Due to the well-known transfer problems, to study "pilot projects" done by other authorities simply is not enough.

2.13 A Clearer Distinction Between Sector-Specific and Sector-Overlapping CE in ICT would be Helpful

The location of ICT-related subjects within the total CE-system is somewhat unclear. Apparently, for a long time EDP has been considered to be sector-specific and therefore has been left to the departments (state level) or to the Data Center (local level). Today, it becomes more and more apparent that, besides technical training, EDP must be a subject of CE in general administration as well, namely in its sector-related and in its sector-overlapping parts. In the definitions and descriptions of these CE-types, ICT does not appear, however. It seems to be necessary to emphasize these two sides of EDP-training and to provide for the respective courses.

By the same token, coordination between the Department of the Interior and the Data Center in CE-matters could be strengthened. This applies already for the mutual mentioning of relevant courses, offered by the other institution, in both CE-programs.

2.14 The Training Market could be More Transparent

The numerous CE-programs and institutions are not as transparent as possible for the addressees. There is a lack of course profiles or "supply profiles", against which the prospective customer can set his particular "demand profile" and make his choice in an appropriate way. This seems to be valid for private business also: according to a study done in 1984 by a Personnel Consulting Company, 75 Percent of persons responsible for CE deplored the lack of transparency of the CE-market[12].

2.15 CE Uses ICT too Little

Another striking feature seems to be that ***CE-programs in ICT normally do not make use of ICT themselves.*** Computer-aided teaching, use of data banks via telecommunication, optical laser discs, expert systems, prototypes of outstanding automation examples, simulation models of automated administrative procedures, and other ICT-based teachware more or less is still to be developed and to be tuned to class teaching. This requires also a better training infrastructure (for example a constant academy) because these media are rather difficult to apply in conference hotels.

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[12]   See report in Computerwoche (Computer Week) of February 22, 1985, p. 58.

2.16   CE-Programs to Update Knowledge are Missing

Actually, the term "continuing" education is still somewhat misleading, at least as far as ICT is concerned. Taking into account the rapid technological change, updating of knowledge in the sense of life-long learning seems to be quite important. But so far, we *have not found any follow-up courses or self-education aids*. This does not mean, of course, that the contents of courses are never updated. An EDP-introduction today does look different, by all means, from such a course 10 years ago. Here, we talk about specific adaptation courses and materials or, at least, the encouragement of employees to take courses that have changed their contents, again after some time.

2.17   Training of Trainers

For the same reasons CE-programs for trainers as target groups seem to be *indispensable ("training of trainers").* What are the important CE-needs today? Which developments have taken place in ICT, in administrative informatics (as an originating discipline which tries to integrate ICTaspects into administration science), and in teaching methods? We have not found any programs, nevertheless, which deal with these important topics. (Since 1984 the State Department of the Interior offers courses in didactics for part-time CE-instructors, however.) It seems that one relies on the - surely given - high personal motivation of most CE-instructors to update their knowledge themselves. But even then, it is neither natural nor appropriate that, for example, all instructors in charge of organization or individual working methods inform themselves individually on recent ICT-developments and their integration into administration, or that ICT-instructors inform themselves on user needs or the relation between users and Data Centers. This goes especially considering the large number of part-time instructors in the field of continuing education.

3 Explanation of Findings

Before we are going to line out some hypotheses which could explain the findings described, we want to stress once more that the CE-system in the State of Baden-Württemberg does by no means seem to be bad, after all, and that we are only talking about improvements of courses in the field of administrative automation, as we have come across in the programs of CE in general administration, both in its sector-overlapping and sector-specific types.

3.1 The Rapid Progress of ICT

The first reason, of course, which comes to ones mind when looking at differences between needs and deeds in the field of ICT-related CE, is *the rapid change of technology itself*. Without doubt, it is extremely difficult to be close on the technical progress' heels. If this already applies to the discrepancy observed between hardware and software (e.g. just now that the software for on-line data processing on large scale computers is available, with Personal Computers the hardware side is again galopping away), this is even more so for CE. It was just in the late 70ies that CE for the public service in Germany, and in Baden-Württemberg in particular, had been re-planned thoroughly. And only a few years later, the ICT-related parts are out of date again.

3.2 Attitude of Reserve during the Years of Political Struggle about Automation

In the Federal Republic of Germany, the 70ies and early 80ies were characterized by quite a bit of *hostility against ICT in public opinion and political debates.* Privacy issues, warnings of the "glassy citizen" or of misinformation and information overflow by telecommunication, proceedings at law against the planned computer-based census or against the planned machine-readable identification card, and other issues of that kind dominated the scene. Even though, on the other hand, ICT was welcome in most administrations (among others in the technical ones), this background certainly did not provide for the favorable climate necessary for ICT-innovations and for the related training endeavors.

3.3 A Certain Lack of "Technical Culture"

This attitude described above, in turn, could roote deeply in our *traditional lack of "technical culture".* Nota bene: not technical expertise is meant, as it founded, among others, Germany's reputation of being a respected nation of craft and industry. What we mean, here, is that technique never has been on the sunny side of our cultural and educational systems. For ages, Latin, the fine arts, history or literature have been in much higher esteem than "just" technical problems. Even more, it is not seldom that people are somewhat proud of not understanding technical matters (by the way, this is also one of the reasons why the Department of the Interior offers, since 1985, a

course entitled "technology for non-technicians"), and this often holds true just for those who are called upon today in order to integrate ICT into administrations and to really shape the ways ICT is used.

Of course, for thousands of years, technique has been changing at a slow rate only. Therefore, technical know-how, inspite of its neglect by the educational system, could become part of everyday life. ICT, however, is a rapidly progressing field of knowledge. Unless explicitly instructed we do not know what to do with it. ***This may contribute to our lack of inventiveness and creativity*** and, furthermore, to our lack of product innovation which in the past has absorbed unemployment resulting from mechanization and automation. Apparently, the question deserves further investigation to which extent this attitude is responsible for the economic crises which some societies face in this period of time.

For public servants, in any case, knowledge-based creativity is an indispensable prerequisite if public administration is going to master the challenges induced by ICT.

3.4 Strategies Applied to Introduce Computers into Administration

The quality of CE in the general administrative aspects of ICT probably has been largely influenced by the ***typical innovation strategy,*** used some 15 to 20 years ago in order ***to introduce computers*** on a wide scale into public administration. In the Federal Republic of Germany, a formalized and consistent strategy has been preferred. EDP-use was not left to the individual department or local authority. Rather, an "EDP-infrastructure" has been established at federal, state and local levels. It consists of cooperative computer centers and a net of coordination committees. This new "EDP-bureaucracy" has had many advantages. Mainly, it provided for a quick, easy, and inexpensive EDP-use by even the smallest local authority or agency. We would proceed in the same way if we had to start over again.

On the other hand, however, knowledge about ICT has also been centralized this way. Public administrators were "exempted" from the "obligation" to bother their heads about EDP-decisions. For one thing, this probably has contributed to EDP-training being considered as sector-specific (see 3.7 below). Furthermore, a side effect of the EDP-infrastructure has probably been a knowledge gap in ICT-matters

which, in turn, more and more presents itself as a barrier against innovation.

3.5 Tendency Towards Coordinated Administrative Actions

This EDP-infrastructure is just an offspring of general phenomena such as *"cooperative federalism" or solidarity.* They are typical for our public administration. The marks of this administrative attitude are clearly visible in the CE-system as General Principles, Guiding Principles, or Skeleton Plans, adhered to by the training institutes. Of course, this does not at all favor innovation if it involves leaving the "beaten path" of solidary action. On the other hand, some day this phenomenon of solitarity could also become the means of spreading a new concept for CE relatively fast among German administrations.

3.6 Overloaded CE-Programs due to Gaps in Pre-Service Training

CE-institutions covered in this report were overburdened for a long time due to the fact that they had to fill up gaps in knowledge left during the time of pre-service education. In particular regarding matters of ICT, CE so far was making up for missing education. To start from a decent knowledge base, as would be desirable, is not possible. The situation ameliorated recently especially due to better education of the elevated service in the newly established Vocational Colleges of Administration. However, even here it is questionable to which degree the above mentioned teaching contents are taught already. In general, the rule is applicable to this case that CE-organizations will remain overloaded with education assignments as long as these are not already covered to the extent necessary during pre-service education.

3.7 Location of ICT-Training within the Entire CE-System

EDP-training, for a long time, has been considered to be sector-specific in all respects - as if it were only necessary to enhance the expert knowledge of EDP-people. Therefore, the responsibility for this field has been left to the various departments provided with or in charge of computer centers. The Department of the Interior and other institutions in charge of CE only now, as ICT is beginning to penetrate the agencies down to the single desks, begin to understand those sides of ICT which make them a candidate for CE in subjects of general administration as well.

Also the terms "Basic training in data processing" and "Professional training in data processing" used by the Guiding Principles of the Cooperative Committee EDP, point to the fact that the general administration aspects of ICT have been neglected for a long time. For what the public servant needs is not just "basic knowledge" (with the tough "professional" problems left to EDP-experts) but professional knowledge and skills preparing him to master ICT and to control it in its political and administrative aspects.

3.8 Contentness with the Module Group Basic Training in Data Processing

A number of facts suggest the assumption that the institutions, responsible for CE of the public service, relied too much on the module group "basic training in data processing" designed by the Cooperative Committee EDP, instead of analyzing its real aim and character and confronting it with the needs of CE in general administration. Yet, the basic training modules, as a matter of fact, had only been a by-product of the Cooperative Committee's efforts to train EDP-experts, as such training was not - and still is not - offered in our pre-service educational system for the public service. At least today it is realized, however, that this way of training can provide only for parts of the knowledge and skills necessary to master the challenges of automation in public administration. The institutions in charge of CE should have seen the module group Basic Training in Data Processing as a first step and should have developed it further.

3.9 Recruiting CE-Instructors from the "DP-Infrastructure"

The pure fact that ICT-related courses heavily rely on lecturers who are members of the EDP-infrastructure (computer centers, coordination committees, etc.) probably has contributed to short-comings of ICT-training as we have observed them. For, this way attitudes such as solidarity and togetherness again and again have been nourished, and the demand for knowledge enabling public administrations to design their information systems themselves (although in contact with the DP-infrastructure) has been kept down. On the other hand, CE depended on these instructors as long as there were not enough available alternatives.

3.10 Crisis of Public Finances

The *given poor situation of public finances* certainly *has not been favorable to daring innovations in ICT-related CE.* Quite to the contrary, EDP-courses which existed in the programs

already, have been among those that were sacrifized in order to cut down budget expenses. Also, EDP-courses were frequented less as a consequence of budget cutting. It is somewhat ironical, by the way, that this could happen in the State of Baden-Württemberg which is generally well-known for its progressive and positive technology policies.

Unfortunately, today we face what could be called a ***"pig cycle" of CE-budgets*** (in economics the term pig cycle is used to describe the habit of farmers to rear pigs independent of real market needs, but in accordance with the given market price). Likewise, CE-budgets have sometimes been cut independent of real training needs, or they stagnate, anyway.

3.11   The Structure of Financing CE

Not only the level but also the ***structure of CE-financing*** has had a bearing on quantity and quality of ICT-related training programs. On the one hand the centralized responsibility of the Department of the Interior for all CE-subjects which are not sector-specific has led to the fact that the necessary financial resources are provided for in this department's budget. This means that all the other departments are in a "free rider" position except for the travel expenses of their employees. Interesting enough, however, travel expenses alone have sometimes been used by the departments as a reason to turn down applications for participation in CE-courses. This shows that CE-costs, in fact, are financed by two budget items: course fees and travel expenses. If only one of them has not sufficiently been provided for, CE might become impossible.

A positive side-effect of the described CE-financing structure has been that participation in courses different from those offered by the Department of the Interior is an exception. This has concentrated CE-endeavors and, probably, ***prevented "CE-tourism".***

On the other hand, the described pattern of CE-financing makes it more difficult for the Department of the Interior to widen current CE-programs because itself would have to take the biggest share in the financial burden implied. From this point of view, the financing by participant fees would probably provide for more leeway with regard to new CE-programs (a financing mode, practised by the Data Center by the way).

3.12 Demand is not Strong Enough

Sufficient demand, of course, is decisive for further developments of CE-programs. In default of it, courses are only difficult to keep in the program. Therefore, first of all it is questionable whether the frequency and duration of CE stated in the General Principles of 1977, are in accordance with today's requirements caused by the rapid progress of ICT. At times of high challenges for CE the suggested quantities are probably not sufficient. This applies especially to public service job descriptions which are new or subject to intense change, as for organizers or "information consultants". Furthermore, it is doubtful whether sufficient promotion and public-relations have been exercised in order to point out to employers the importance of CE pertaining to questions of administrative automation, and thus to ease the - basically inevitable - conflict between regular work assignments on the one hand and CE-requirements on the other.

Sometimes, decision processes about participation in CE-seminars even resulted in somewhat ideologic confrontations between work councils and employers, although when CE is looked at dispassionately, conflicting interests can hardly be seen. A rule contained in the Federal Civil Service Skeleton Act gives expression to this: it is the obligation of both, employers and employees to take care of CE.

3.13 Resistance to Change Long-Existing Program Structures

As a last hypothesis which could explain some of our findings we want to draw attention to the fact that it seems to be very *difficult to change current CE-programs.* To convince everybody involved that a certain subject is outmoded and should be replaced by a new one like ICT often proves to be impossible. Prolongation of current programs is a conceivable solution. But it, too, is difficult to realize, one reason being the misinterpretation met that a public servant who can afford to "idle his time away" in CE-courses has "obviously" not enough work to do. Another obstacle to a mere prolongation of existing CE-programs is a recent trend which can be observed in some administrations, namely rather to shorten training seminars to three days in order to prevent the employee from neglecting "real work" too long. Moreover, the integration of ICT-matters and conventional CE-contents would not be realized by a strategy to simply extend given CE-programs.

4 Some Proposals

4.1 The New "Paradigm" of Administrative Automation and its Bearing on CE must be Made Clear

CE-efforts of public administration and of schools and institutes of administration in the first place must still be strengthened as far as training in ICT-related matters is concerned. The recent technological advancements in fields as office automation or telecommunication have made it undoubtedly clear that ICT is now hitting the core of administrative activities whereas, in the past, mainly certain automatizable parts were cut out of administration and handed over to Data Centers for "industrial processing", batch or on-line. Now ICT is going to penetrate and influence almost every sphere of administration. Using Leavitt's simple model of an institution (containing tasks, organizational rules, employees, and working techniques as four elements, and their respective relations), it is easy to demonstrate that ICT as one of the most important working techniques in our days has the potential to influence *tasks* (e.g. via ICT-tasks formerly difficult to realize, now become possible, such as citizen information, security control in local communities, or management information and control), *organization* (modern ICT is a new pole in the "magnetic field" between tasks and their assignment to posts; divisions, sections, and offices will be restructured, many procedures are going to be changed), and the *personnel side* of administration (altered job structures, new job contents, ergonomic influences, new qualifications, more delegation of responsibility, and the like).

The bearing ICT has or is going to have will have the rank of an reform. With regard to this, who else but the public service has greater familiarity with the effects that ICT could have or should have on administration? Who else has the competence to decide about the direction ICT-use is going to take? ICT, afterall, should not be a revolution surrogat and annul existing hierarchies of command. If this is so, then there is only one way to prepare the public service for its responsibility - training.

This view is not yet generally understood and accepted in public administration, although it is to admit that administrative decision bodies did participate in the preparation of the Data Center Act of 1970, in its amendment of 1982, as well as in the development of a new concept for data processing in the state administration in 1984. It belongs to the schools and institutes of administrations' tasks to elucidate and to disseminate the new character of ICT and to raise the demand for the respective CE-programs.

4.2 The Public Service must be Convinced that Permanent CE in ICT-Related Matters is Inevitable

The potential of ICT can, of course, only be realized by the public servants. They are the most important resource for the constant struggle to improve public administration. Their readiness to upgrade and update their skills by CE must be raised, not only for the sake of improving effectiveness and efficiency of administration, but also in their own personal interest. ***In times of rapid technological change*** as today, ***training seems to be the only alternative "to stay in business".*** Many jobs will never be quite the same again. Malediction of technological progress is no suitable way of action. It is doubtful whether it can be taken for granted that ICT is a "jobkiller". So far mankind never has run out of work because of technical progress. Only the ***kind*** of work changed (for public administration see the transition from sovereign to service administration as an example). Why should this be different in the future? As long as this is not proven, we should continue to train public servants so that they get higher qualification. For, in the future even more than today, it will be the skilled administrator who gets the job or who gets the higher qualified job. Our CE-programs must be qualified enough to support this goal, too.

4.3 CE-Principles and Skeleton Plans must be Adapted

New standards seem to be necessary for CE-programs which deal with general administrative aspects of ICT, standards as we encountered them in the Federal Republic of Germany for the training of EDP-specialists (compare the Guiding Principles of the Cooperative Committee EDP from 1973 or the General Principles for CE from 1977). Principles, skeleton plans and the like are useful to support the creation and announcement of respective CE-programs, to instruct the trainers correspondingly, and to raise the interest of both employees and their superiors.

At the same time, the precise location of ICT-training within the various CE-programs (introductory, adapting, and promotive CE, and for each: CE in sector-specific or in sector-overlapping aspects of general administration) should be made clear.

4.4 Demand for CE must be Backed Up

Adequate principles and skeleton plans as well as according course offers are only one side of the coin. A respective demand is, of course, also important. This requires public relations activities in order to

convince both employers and employees of the importance of CE in ICT-related matters and to encourage them to take corresponding offers into consideration. In addition, the concepts in the current General Principles regarding frequency and duration of CE-courses should be re-examined.

4.5 A "New Generation" of CE in Administrative Automation must be Developed

Schools and institutes of administration should give up their rather incremental process of CEprogram planning. Muddling through means to react to demands as they are raised by the public service. As shown above, this does not suffice given the potential and change rate of ICT. Rather, the training institutes should take the lead and develop training programs able to cope with the ICT-challenge. What we *need*, is *a "new generation" of CE in ICT-related subjects* (to borrow a term from the computer jargon). If programs are qualified and if their announcement is well-based, one will not have to worry about the necessary demand by the public service.

4.6 Ability to Design Information Systems must be the Main CE Concern

ICT-related CE must qualify the public servant for more than just handling personal computers or software packages produced for his department by service centers. *In the first place each public servant must be able to define the requirements for proper ICT-use in his sphere of influence.* This presupposes that he is aware of potential, costs, and impacts of ICT and is able to analyze and change the organization. Such important activities should not be left to technocrats (ICT, as was mentioned already above, should be no revolution surrogat). Sector-specific knowledge, combined with knowledge in general aspects of administration including ICT, will have to be the future qualification of public servants.

As shown, leadership was among the favorite CE-subjects in the programs we came across. And unquestionably guidance of employees will remain the most important talent of many public administrators. But if the description of administrations as man/machine-systems is correct (and given modern technology, apparently this is more and more the case) then management of machines also becomes an important capability.

4.7   New Types of Training Courses are Needed

Partly, new types of training courses seem to be needed, among others programs

- for top managers and politicians (whose main competence is to initiate and implement change)
- for agencies planning to implement ICT (project seminars)
- for EDP-specialists who should know more about public administration as their client
- for CE-instructors (life-long learning matters here, too)
- which *enable each public servant to get hands-on experience with ICT-equipment.* This is not to mean that each employee is going to be a programmer in the future (although high level languages and other devices will enable the user to realize a greater share of his ICT-needs directly). Rather, personal experience in computer-handling seems to facilitate (or make possible in the first place) communication with EDP-experts and to raise one's self-confidence with respect to ICT-matters. Finally, personal ICT-experience can replace hostility against technology, as far as this is just a compensation for ignorance. Of extreme importance in this respect is that instructors do not see their task in discouraging the participants with "bits and bytes", number systems or alike, but teach them the ICT-potential from a user's point of view. Without such knowledge one can hardly expect creativity of the public service as regards ICT-supported problem solving.

4.8   Integrated ICT-Training is Necessary

When creating new CE-courses it should not be overlooked, however, that many traditional subjects, too, need to be taught "ICT-orientated". E.g., a CE-program on organization would not be up to today's standards if it did not cover the influence of ICT on organizational structures and procedures, on personnel relations, or on public tasks, intensively. CE in administrative automation, therefore, does not mean simply to add some new ICT-courses. The whole training program must reflect the trend towards an "ICT-orientated" public administration.

4.9   ICT must be Used in CE More Intensively

ICT itself should be utilized to a much higher extent for CE-purposes. From *computer-aided* instruction to *demonstration models of outstanding automation examples* there is a wide range of possibilities. This means that CE in administrative automation itself should always be kept at the level of technical progress and that it should be able to demonstrate the directions in which administrative practice can be further developed.

Major consequences for CE-institutions follow from this postulation: they may not rely exclusively on what the ICT-market offers or what public administrators demand. Rather they must try to actively influence both. Of course, this presupposes, above all, own endeavors in research and development of ICT-supported systems as well as cooperation with other institutions dealing with this matter.

4.10   Adapting CE must be Given High Emphasis

It is suggested that the necessity of life-long learning (clearly visible considering the speed of technological change) be better supported by training institutes as well as by employers. The participants must be given - as long as pre-service education does not provide for it, at the latest during introductory CE - a solid basic knowledge on the grounds of which they can add further knowledge time and again. This must be facilitated by media like follow-up courses, computer aided teaching, etc.

4.11   CE-Programs must be Fit into the Educational System

CE-programs must be tuned to knowledge already acquired by the participants in previous educational steps or still to be learned in subsequent programs. As far as the personal handling of ICT is concerned - to choose only this example - today this still means that no knowledge can be assumed for the major part of the public service. Due to increasing endeavors at schools and in pre-service education this may be different one day. CE-programs must take such changes into consideration.

In accordance with this it must be avoided to design CE-programs apart from the total educational system. Beyond that, influence should be exerted on those responsible for education in order to relieve introductory CE of being mainly a means to make up for missing pre-service education and, thus, to be able to concentrate on adapting and promotive CE.

4.12 The CE-Market must be Made More Transparent

It is suggested that all CE-activities in administrative automation available be made transparent. The public servant should be put in a better position to find out and to compare what exactly he is offered to learn and where. This, of course, means more than merely a catalogue. A prerequisite would be to *develop profiles of CE-courses* enabling a comparison between supply and individual needs and which could be stored in data banks. At the same time, *more transparency in the CE-arena* would accelerate realization of the standards mentioned and lead to a healthy competition between training institutes.

4.13 Sufficient Financial Means for CE must be Provided

Of course, all these proposals can only be expected to come true if there is sufficient *financial support*. But if ICT truly has the potential to improve our public administrations and if public servants are the ones who must take the necessary action then training of the public service in ICT-related matters becomes indispensable.

4.14 The "DP-Infrastructure" must Recognize CE as a Field of Business

The EDP-infrastructure should recognize CE in ICT-related matters *as an important field of business.* Absolutely, the intimate ICT-knowledge available in computer centers, coordination committees etc. should be utilized - besides the other CE-institutions. But it has to be put in proper perspective. Not defense of the existing (yesterday's, that is) computer structures is needed. Rather, the participant should be fully instructed on the ICT-potential available. Should the DP-infrastructure be able to adapt to the new situation, it will remain an important figure in the CE-game.

4.15 The Impressive CE-System must be Utilized to Spread ICT-Related Knowledge

Our CE-system (consisting of departmental CE-sections, coordination committees, laws, guidelines, skeleton plans, training institutes and the like) is quite impressive. Even more impressive seems to be, with respect to CE in ICT, the need to utilize this system for updating the given CE-programs, the need to act - now.

This task can be coped with in a relatively short time. The "change of paradigm" in administrative automation - suggested here - must be discussed. Its bearing on CE must be reflected by CE-principles and skeleton plans. Corresponding course programs are to be developed and to be offered by the various CE-institutions. The demand expressed by employers as well as by the public service must be raised and stabilized. It seems that there is a good chance to grant CE the weight and importance required, given the framework of endeavors starting now in some states, aimed at implementing "State System Concepts" for ICT-use or "Concept Proposals for Information Processing" (these being the names used in Baden-Württemberg on state and community level, respectively). To include CE-measures in such endeavors will be necessary because promotion of ICT-use in administration will only partly result in success, should the technique not be mastered by the public service.