The promise of an automated migration policy
On planning an information system in the Swiss federal administration in the 1960s

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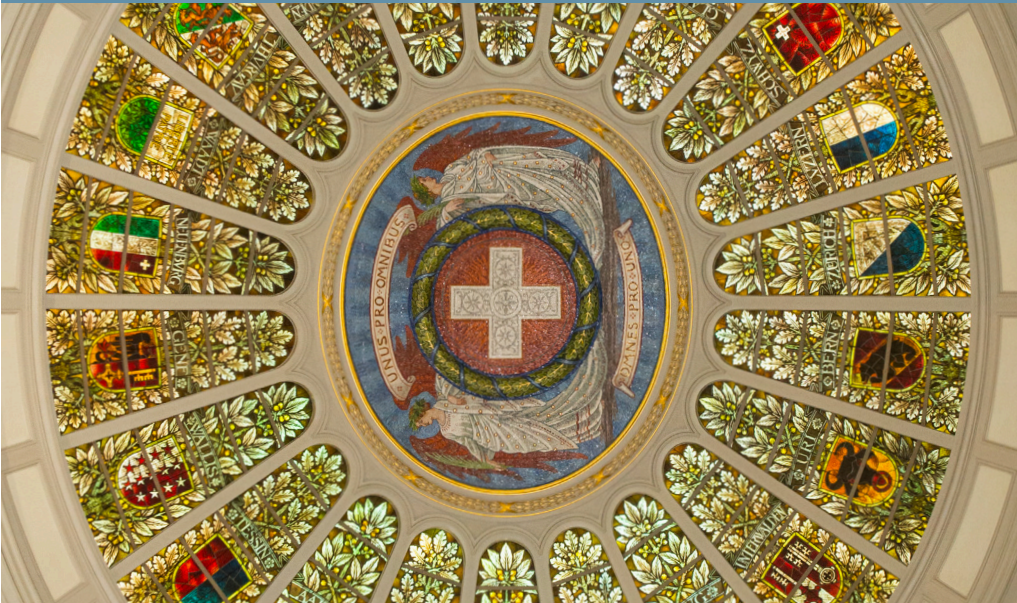
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The promise of an automated migration policy: on planning an information system in the Swiss federal administration in the 1960s *

Moritz Mähr

Abstract

This article examines the planning of the Central Aliens Register in Switzerland from 1964 to 1971. This first national information system was designed to support the migration policy of the federal administration in such a way that foreign workers were distributed fairly among the cantons according to economic and demographic needs. Although it only fulfilled its original purpose to a limited extent, within a few years it became an important tool of the Federal Aliens Police and remained in operation until 2008. From the outset, this new sociotechnical infrastructure led to a conflict between the federal status quo and an automated, centrally controlled migration regime. The article analyzes how the federal migration regime in Switzerland responded to the tension between automation and federalism.

Since the commission began its work, the nature and scope of immigration have changed considerably. The problem of foreign workers has also undergone a fundamental change in public opinion. While previously the large influx of foreign workers was widely regarded as desirable, even necessary, because it was conducive to the growth of our economy, recently there has also been a growing awareness of the disadvantages and dangers of this development.[1]

Introduction

In a period of strong economic growth in the 1950s and 1960s, Switzerland faced a complex mix of political developments. The economy promoted a massive influx of labor migrants, and cantons issued work and residence per-

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1 Bericht der Studienkommission für das Problem der ausländischen Arbeitskräfte, Bern 1964, p. 8 (author's translation).

mits accordingly. Between 1960 and 1965 alone, the share of foreigners among the population rose from 10 % to almost 15 %. The steep rise fueled fears of wage dumping among trade unions and of «over-foreignization» (*Überfremdung*) among right-wing nationalists. Meanwhile, Italy, the country of origin of most migrants, increased pressure on Switzerland to improve poor working conditions and access to the social security system. Right-wing nationalists attempted to radically cap the percentage of foreigners in the population through a series of popular initiatives. The chances of success of these initiatives were good, and many employers feared the economic consequences. In order not to jeopardize the supply of skilled labor, the Federal Council increasingly intervened in the competencies of the cantons and attempted to centrally control the migration regime.[2]

The migration regime of the 1960s was a federal patchwork. Under the provisions of the Swiss constitution, cantons could issue work, settlement, and residence permits at their own discretion. Cantons with seasonally fluctuating labor demands (such as tourism, the construction industry, and agriculture) issued short-term permits valid for only a few months. At the end of the season, these workers would go back to their families and home countries before returning to Switzerland for the following season. Living and working conditions were often precarious: there was no statutory unemployment insurance, no minimum wage, and no support for integration. Cantons with a high demand for skilled workers issued longer-term work and settlement permits, allowed family reunification, and ensured swift integration.

The migration authorities were also very heterogeneously structured. In the canton of Basel City, where demand for skilled workers was high, the various authorities were combined in a well-organized office; in other cantons, authorities were involved at the cantonal and municipal levels. These differences meant that it was difficult to collect consistent statistics on the labor market and demographics at the national level. Some cantons reported figures to the administration from the cantonal alien police offices or employment offices, while others reported figures from resident registration of-

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2   Peter Hablützel, Peter Gilg, Beschleunigter Wandel und neue Krisen (seit 1945), in: Beatrix Mesmer et al. (eds.), Geschichte der Schweiz und der Schweizer, Basel 1986, pp. 821–891.

fices. There was no clear overview that would allow coordination of the cantonal migration regimes. With the new nationwide restrictive measures introduced in 1970, the Federal Council broke with the status quo and upset the balance between the federal administration and the cantons. An automated information system, in which all aliens were to be recorded, was to statistically underpin the new policy and give it more legitimacy.

This article examines the planning of the Central Aliens Register (ZAR) information system from 1964 to 1971 to show how federal migration policy in Switzerland dealt with the tension between the federal status quo and automation. Sources from the Federal Archives in Bern are examined. They document the negotiation process between the federal administration and the cantons in this information infrastructure project. Our research shows that the historical development of Swiss migration policy and related government actions requires analysis of technical and organizational artifacts. Two concepts are of central importance: migration regimes and infrastructure. According to Lucassen, Hoerder, and Lucassen, migration regimes are a set of institutions and policies designed to restrict or facilitate the spatial movement of populations. Star defines information infrastructures as sociotechnical systems that record information about government actions and decisions and make it accessible to selected parties.[3]

Gees has shown that labor migration was a driver of European integration in the 1960s and 1970s. Switzerland was integrated into the Western European migration system through international treaties and active participation in international organizations. In his study of the restrictive migration policy measures, Mülli showed that the negotiation processes of Switzerland's federal migration regime resulted in new, highly technical governancet techniques. Espahangizi and Mähr have shown that these new techniques were largely based on statistical and computerized procedures.[4]

3   Jan Lucassen et al., Terminologien und Konzepte in der Migrationsforschung», in: Klaus J. Bade et al. (eds.), Enzyklopädie Migration in Europa: vom 17. Jahrhundert bis zur Gegenwart, Paderborn 2007, p. 39; Susan Leigh Star, The Ethnography of Infrastructure, in: American Behavioral Scientist, 1999, 43: 387.

4   Thomas Gees, Die Schweiz im Europäisierungsprozess. Wirtschafts- und gesellschaftspolitische Konzepte am Beispiel der Arbeitsmigrations-, Agrar- und Wissenschaftspolitik, 1947–1974, Zurich 2006; Michael Mülli, Kontingentierung von Migration.

This paper ties in with the history of computing and history of administrations in nation-states. As Agar has shown for Great Britain and Fleischhack for the Federal Republic of Germany, information systems played a key role in the administrative activities of the 1960s. For Switzerland, little research has been done on the interaction between computers and administration. Schwery has shown how the Federal Statistical Office acquired the first computer for the census in 1960 as an unspectacular replacement investment for conventional punched card machines, and how the Federal Computing Center developed from this acquisition. Zetti uses the example of the introduction of electronic data processing in the PTT (postal services, telegraphy, and telephony) companies at the end of the 1960s to show how staff associations, project management, the Computing Center, and the general directorate all worked together on the introduction of the computer to promote their own agendas. Gugerli and Bächi analyzed the PTT's integrated telecommunications system for the management and control of digital communications in the 1960s. Brugger examined how the IT project to introduce the new social security number in the 1970s changed organizational development within the federal administration. Koller examined the digitization of the federal administration using the example of ZAR, thus providing important preliminary work for this paper.[5]

Zur Soziologie einer Regierungstechnik, in: Lucien Criblez et al. (eds.), Staatlichkeit in der Schweiz: regieren und verwalten vor der neoliberalen Wende, Historische Bildungsforschung, Vol. 2, Zurich 2016, pp. 171–191; Kijan Espahangizi, Moritz Mähr, The Making of a Swiss Migration Regime: Electronic Data Infrastructures and Statistics in the Federal Administration, 1960s–1990s, in: Journal of Migration History, 2020, 6(3): 379–404; Moritz Mähr, Kijan Espahangizi, Computing Aliens. From Central Control to Migration Scenarios, 1960–1990, in: Monika Dommann et al. (eds.), Data Centers: Edges of a Wired Nation, Zurich 2020.

5   Jon Agar, The Government Machine: A Revolutionary History of the Computer, History of Computing, Cambridge, MA 2003; Julia Fleischhack, Eine Welt im Datenrausch. Computeranlagen und Datenmengen als gesellschaftliche Herausforderung in der Bundesrepublik Deutschland (1965–1975), Zurich 2016, p. 22; Nick Schwery, Die Maschine regieren. Computer und eidgenössische Bundesverwaltung, 1958–1965, Preprints zur Kulturgeschichte der Technik, 2018 (29), https://doi.org/10.3929/ethz-b-000243303 (3/2/2021); Daniela Zetti, Die Erschliessung der Rechenanlage. Computer im Postcheckdi-

The first section of this article presents the historical context, the key players in the federal administration, and their agenda. The second section examines the minutes of the Expert Commission for Statistics on Foreigners and the expectations of the various stakeholders regarding the information system. The third section analyzes the final report of the Expert Commission. In this context, focus is placed on questions that were not clarified during the negotiation process in the Expert Commission. The fourth section shows how the Federal Council took back control of the project in response to tensions between the federal administration and the cantons and municipalities. The fifth section outlines the course of the pilot phase and shows how considering technical and organizational artifacts underscores the interdependence of automation and federalism. The conclusion summarizes the argument and suggests further research questions.

Statistics for growth and against fear of over-foreignization

As early as the beginning of the 1960s, Max Holzer, director of the Swiss Federal Employment Office, was convinced that Swiss labor market policy had to undergo fundamental changes. The system of «guest workers» was long regarded as a guarantee of low wage costs and as an implicit economic buffer. If economic growth were to slow down, residence permits would not

enst, 1964–1974, in: Gisela Hürlimann et al. (eds.), Gesteuerte Gesellschaft – Orienter la société, Zurich 2009, pp. 88–101; David Gugerli, «Nicht überblickbare Möglichkeiten». Kommunikationstechnischer Wandel als Kollektiver Lernprozess, 1960–1985, Preprints Zur Kulturgeschichte Der Technik, 2001 (15), https://doi.org/10.3929/ethz-a-004254297 (3/2/2021); Beat Bächi, Kommunikationstechnologischer und sozialer Wandel. «Der schweizerische Weg zur digitalen Kommunikation» (1960–1985), Preprints zur Kulturgeschichte der Technik, 2002(16): 85, https://doi.org/10.3929/ethz-a-004465764 (3/2/2021); Jérôme Brugger, At the Dawn of Swiss E-Government: Planning and Use of a Unique Identifier in the Public Administration in the 1970s, in: Administration & Society, 2018, 50(9): 1319–1334; Guido Koller, The Central Register of Foreigners. A Short History of Early Digitisation in the Swiss Federal Administration, in: Media in Action, 2017(1): 81–92, https://www001.zimt.uni-siegen.de/ojs/index.php/mia/article/view/6 (3/2/2021).

be issued. This would reduce the supply of labor, which in turn would have a positive effect on the unemployment rate.[6]

The recruitment areas for cheap labor were increasingly extended to avoid rising wage claims in the countries of origin. While in the 1950s workers were mainly recruited from neighboring countries and southern Western Europe, in the 1960s Switzerland was also recruiting in Greece, Yugoslavia, and Turkey. At the same time, Italy was demanding better working conditions for its citizens and access to the Swiss social security system, permanent right of settlement, and simplified family reunification.[7]

Holzer assumed that at some point Switzerland would give in to these demands. The proportion of foreigners in the permanent resident population would then increase and would stabilize at a high level. Family reunification would lead to demographic shifts and make many new homes, schools, hospitals, and transportation services necessary. In order to study this scenario scientifically and to derive specific policies, Holzer suggested to the Department of Economic Affairs in 1961 that a study commission be set up. Holzer himself was appointed chairman of the subsequent commission to study «the problem of foreign workers».[8]

The government's issue with foreign workers was that future migration policy had to reconcile the conflicting claims of various political groups. On the one hand, the rapidly growing economy demanded more and more cheap labor. On the other hand, trade unions and national-conservative groups feared the economic consequences of migration – inflation, wage dumping, and housing shortages – and the rationally elusive political and

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[6]   André Holenstein, Mitten in Europa: Verflechtung und Abgrenzung in der Schweizer Geschichte, Zurich 2014, pp. 307–328. A detailed description of the guest worker system can be found in Marcel Berlinghoff, Das Ende der «Gastarbeit»: europäische Anwerbestopps 1970–1974, Studien zur historischen Migrationsforschung (SHM), Vol. 27, Paderborn 2013, pp. 75–97.

[7]   Matthias Hirt, Die Schweizerische Bundesverwaltung im Umgang mit der Arbeitsmigration: sozial-, kultur-, und staatspolitische Aspekte von 1960 bis 1972, Saarbrücken 2009, pp. 64 ff., 219 ff.; Tobias Senn, Hochkonjunktur, «Überfremdung» und Föderalismus: kantonalisierte Schweizer Arbeitsmigrationspolitik am Beispiel Basel-Landschaft 1945–1975, Zurich 2017, pp. 27–40.

[8]   Ausländischen Arbeitskräfte.

demographic «danger of over-foreignization». For Holzer, it was obvious that immigration would have to be restricted in future. But to what extent immigration could be restricted and whether the «quality» of immigration could be controlled was unclear. The proportion of foreign workers in labor-intensive and low-productivity, low-wage sectors such as agriculture was very high and could be reduced by modernizing machinery without impairing economic growth. In industry and the service sector, however, the country was dependent on foreign skilled workers. The government thus had to find a way of restricting immigration so as to allow the labor market continued access to skilled workers from abroad without fueling the xenophobic resentment of the population.[9]

In its influential final report of 1964, which ran to nearly 300 pages, the study commission made various proposals for reforming labor market policy. The decentralized control of labor supply by the cantons was felt to be inefficient. For this reason, the commission argued, the Federal Council should intervene in the cantons' competencies to steer them toward a centralized allocation of work, residence, and settlement permits based on economic and demographic considerations. To this end, the commission also called for better social and labor market statistics. Only with complete, accurate, and regularly collected figures would it be possible to manage labor migration effectively and in a growth-friendly manner. Good figures were increasingly becoming an important tool for the federal administration; they promised legitimacy, credibility, and visibility. Statistics served «agenda setting» in the political debate.[10]

In late 1964, shortly before the report was published, the issue of labor migration became a hot topic among the public. Italy had renegotiated the 1948 «emigration agreement» with Switzerland and wrested some concessions from it. Swiss national-conservatives considered the government's concessions in the area of settlement rights and family reunification excessive.

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[9]   Hablützel, Gilg, Beschleunigter Wandel; Damir Skenderovic, Gianni D'Amato, Mit dem Fremden politisieren: rechtspopulistische Parteien und Migrationspolitik in der Schweiz seit den 1960er Jahren, Zurich: Chronos 2008, pp. 31–68.

[10]   Bericht der Studienkommission für das Problem der ausländischen Arbeitskräfte, Bern 1964. Hans Ulrich Jost, Von Zahlen, Politik und Macht: Geschichte der schweizerischen Statistik, Zurich 2016, pp. 5–100.

The National Action against the Over-Foreignization of the People and Homeland, a right-wing party, began collecting signatures for a popular initiative to restrict immigration. The so-called over-foreignization initiative called for limiting the proportion of foreigners in the total population to 10 %. Since almost 15 % of the population were foreigners and the demand for foreign specialists was still growing, this was a radical proposal.[11]

The Federal Council was convinced that the consequences of the initiative would be detrimental to the economy and immediately produced a range of measures. At the end of 1964, the Federal Aliens Police published a set of social statistics called «over-foreignization statistics», in reference to the commonly used expression «over-foreignization of the labor market» described in contemporary economics. Residence and settlement permits were used to assess the proportion of foreigners in the resident population. In addition, the Aliens Police issued circulars to encourage the cantons and communes to standardize the permit and registration processes. The Federal Council attempted to reduce support for the over-foreignization initiative among Swiss citizens by means of a particularly high profile policy: in January 1965, it issued a general entry ban for foreigners who could not produce an employment contract.[12]

Like the policies of the Federal Council, the debates in parliament and in the public arena increasingly focused on the available figures. Calls for a quantitatively measurable restriction on immigration became louder. The differing survey bases led to the circulation of various, sometimes contradictory, numbers. This created confusion and led to criticism of the Employment Office's statistics. Consequently, the Department of Economic Affairs commissioned the Central Office for Organizational Issues (Organizational Staff) in April 1965 to review the Employment Office's statistics.[13]

The Organizational Staff was a small executive staff attached to the Federal Council that supervised the Federal Computing Center and coordinated all of the federal administration's automation projects. Both its director, Otto

11   Gees, Europäisierungsprozess, pp. 121–135.
12   Hirt, Schweizerische Bundesverwaltung, pp. 54–55.
13   Swiss Federal Archives (BAR), E4300C-01#1998/299#19*, Brief Overview of ZAR's History.

Hongler, a lecturer at the Institute of Business Administration at ETH Zurich and president of the Swiss Society for Rational Administration, and his deputy, Hans Kurt Oppliger, an economist and former employee of the Bull computer company, were advocates of the operations research method of military planning. This method assumes that the success of organizational changes can be measured and mathematically optimized.[14]

The Organizational Staff considered the current statistics to be insufficient and supported the plan to collect statistics on foreigners more frequently and more accurately. However, no one in the federal administration had any experience with computerized registers and automated statistics of this magnitude, which were intended for continuous operation. The previous major projects of the Computing Center – the population census, the agricultural business census, and the commercial business census – were one-off statistical analyses that were planned from scratch every ten years. In addition, the Organizational Staff were convinced that the legal basis was insufficient for the continuous collection of data. For this reason, they recommended in their report that a broad-based expert commission be set up with the participation of the municipalities and cantons.[15]

This the Department of Economic Affairs did not do. Instead, it commissioned an internal administrative working group consisting of members of the Statistical Office, the Employment Office, and the Aliens Police to propose ways of improving the statistics.

The new statistics run on a mainframe computer in Bern

In 1965, this administrative working group started its work under the leadership of Max Baltensperger, head of the section for social statistics at the Statistical Office. One year later the group presented their initial results. The

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14   BAR, E6500–02#1986/114#315*, Expert Report on Improvements in the Government Activities and Administrative Management of the Federal Council.

15   BAR, E7170B#1977/67#368*, Minutes of the 1st Meeting of the Expert Commission for Statistics on Foreigners. E6502–02#2002/226#16*, The Initial Situation for the Replacement and Enlargement Problem. E6502–02#2002/226#16*, Operating History of the Computing Center from 1966.
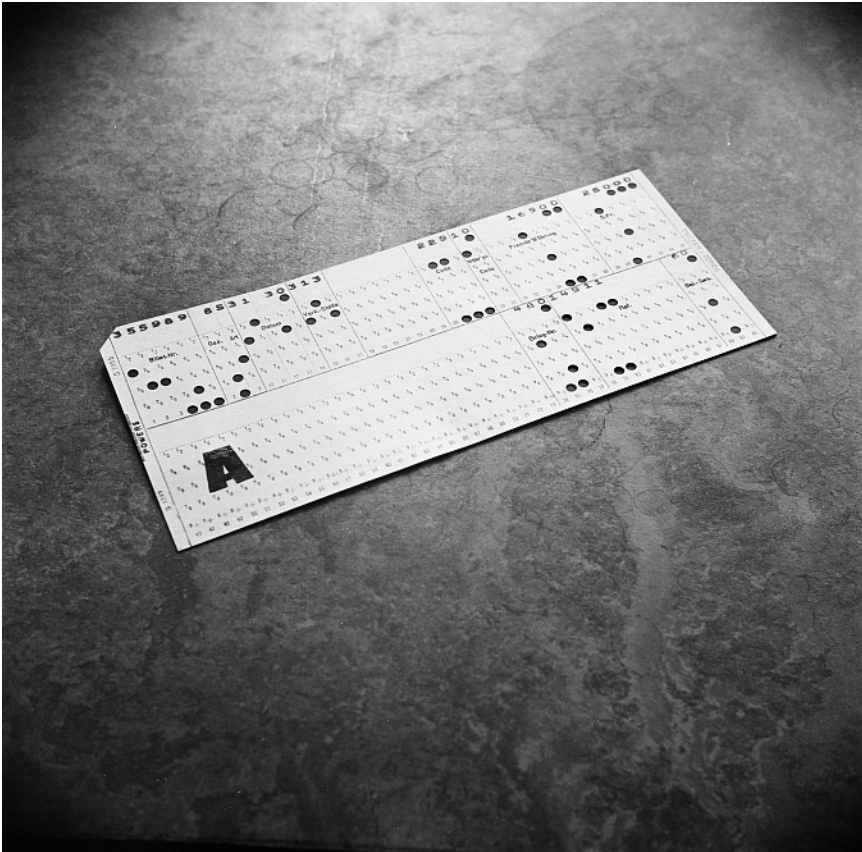
Punched card (ETH Library Zurich, LBS_SR01–05328).

new statistics were to be run in the Computing Center on mainframe computers as a register of persons and to provide reliable figures at regular intervals. Note that, unlike today's personal computers, the mainframe computers available at the time were not operated interactively via screen, keyboard, and mouse. First, program instructions had to be punched onto cards (Fig. 1) and transferred to the processor unit (Fig. 2). Then data, also stored on punched cards or magnetic tape, was processed. Finally, the results were printed out or transferred to magnetic tape.[16]

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16   BAR, Brief Overview.
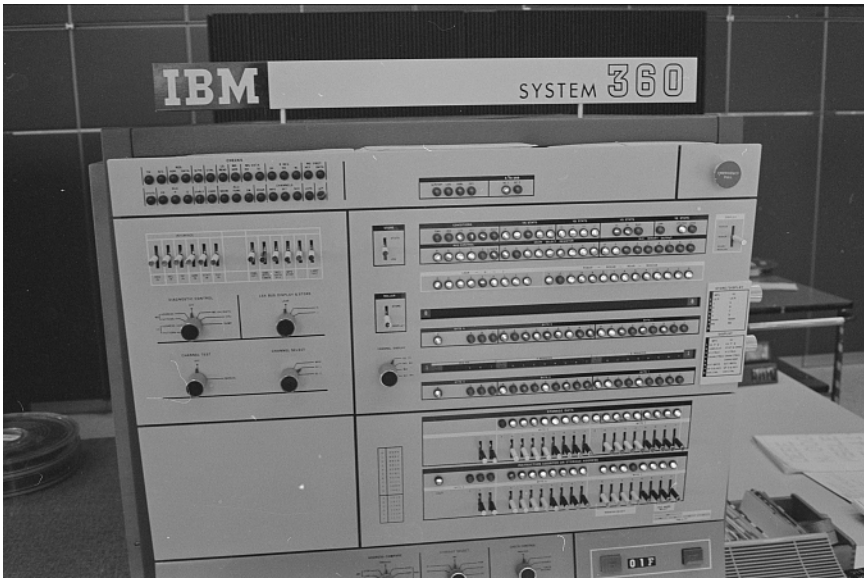
Fig. 2: Front view of an IBM System/360 computer (ETH Library Zurich, Com_L19–0071–0002–0002).

The use of mainframe computers in private and public administration became popular in the 1960s, and statistical analysis was one of the main applications of these machines. IBM demonstrated the concept to the public with an art installation at the 1964 National Exhibition. Questionnaires were distributed in front of a sculpture characterized as a foreigner, and visitors were asked how much they identified with common stereotypes about the Swiss on a scale of 1 to 10. The machine-readable questionnaires of almost 600,000 visitors were read by a mainframe computer and compared with each other. Within a few moments, the computer printed out a result. Visitors could see for which questions and to what extent their answers deviated from the average.[17]

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[17]   René Levy, Gulliver et la politique, in: L'Expo 64, Mémoire Vive, page de l'histoire lausannoise 9, Lausanne 2000; Koni Weber, Umstrittene Repräsentation der Schweiz: Soziologie, Politik und Kunst bei der Landesausstellung 1964, Historische Wissensforschung 1, Tübingen 2014.

The choice of technology seemed to be obvious for the working group: automated statistics on a mainframe. However, there was disagreement about who should run these statistics. No authority possessed the legal competence that would have made the decision obvious. Both the financing and the legal basis had to be clarified. The Statistical Office and the two closely cooperating authorities – the Employment Office and the Aliens Police – wanted to operate the expensive new statistics on foreigners. In order to clarify this issue, an expert commission was to be set up – as requested by the Organizational Staff a year earlier – with the participation of the municipalities and cantons.

The commission was set up by the Department of Economic Affairs on 24 May 1966. According to the official announcement, the group was tasked with clarifying whether the planned automation of statistics on foreigners could be implemented in practice. Under the leadership of Theo Keller, professor of economics at the University of St. Gallen, selected officials from statistical offices, employment offices, resident registration offices, and immigration police authorities from the cantons and municipalities examined the measures proposed by the working group.[18]

As an economist, Keller was an expert in quantitative methods. He had published on the advantages of administrative automation as early as the 1950s. At the end of 1965, as chairman of the Expert Group on Foreign Workers' Regulations, Keller had already drafted new restrictive measures for the Federal Council and had met the head of the Department of Economic Affairs, Hans Schaffner. In the following years he held key positions in several of the department's commissions.[19]

As director of the Employment Office, Holzer led the commission in a way that severely limited its scope of action. Over 20 participants attended commission meetings. Some participants who were also members of the administration's internal working group had already settled on which proposals should be more closely examined. Only two meetings were scheduled –

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18   BAR, E7001C#1978/59#954*, Report of the Expert Commission for Statistics on Foreigners.

19   Theo Keller, Die wirtschaftliche Bedeutung der Automation, in: Schweizerische Zeitschrift für Volkswirtschaft und Statistik, 1958(I-3): 48–67.

one in August 1966 and one a few months later in November. Given the major financial and organizational implications of the proposals for municipalities, cantons, and the federal administration, this was a tight schedule.[20]

The first commission meeting was marked by sharp questioning and objections from the municipalities and the cantons. Adolf Ballmer, head of the Basel-Landschaft employment office and later president of the Association of Swiss Employment Offices, criticized the working group's proposals. He wondered whether a new method via the data center would be able to eliminate the main source of error, namely, the way the different communities collected their data. Some of them recorded the place of work, others the place of residence. Among other things, this practice would lead to outdated numbers or double counting. Ballmer spoke out in favor of harmonizing the cantons' data collection procedures. But he saw the decentralized federal structure of Switzerland's migration regime as an insurmountable hurdle.[21]

Marc Virot, head of the cantonal aliens police in Bern and president of the Association of Aliens Police, pointed out an important distinction: permits were counted, not foreigners. In most cases the data came from written reports from employers and landlords, not from the persons concerned themselves. In contrast to the authorities in the cantons and municipalities, the federal administration not only rarely came into direct contact with the persons affected but was also unaware of the consequences of its policies for the local authorities.[22]

Moreover, although the representatives of the cantons must have known that the Federal Council would be cutting back their powers even further in future, Virot could not imagine automating and standardizing the reporting system in view of the cantonal differences. It would certainly be easier for the central authority if the forms were uniformly designed. He did not believe, however, that the cantons could agree on uniform punched cards, as there

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20   BAR, Minutes of the 1st Meeting; E7001C#1978/59#954*, Minutes of the 2nd Session of the Expert Commission for Statistics on Foreigners.
21   BAR, Minutes of the 1st Meeting.
22   Ibid.

were great differences, especially with regard to reported mutations (changes) in foreigners' records.[23]

The internal administrative working group reacted to these objections with slightly revised proposals, which they sent out only shortly before the second meeting. It was also decided to hold an extensive tour of the Computing Center before the second meeting in order to convince the commission members of the new technology. Subsequently, the statisticians took into account the concerns expressed at the first meeting. During the trial run, the existing statistics would certainly be continued. The switch to the new system would only be made when all concerns had been dispelled and flawless operation could be guaranteed.[24]

Commission chairman Keller also assured the group that the report was to be understood as a draft. The meeting dragged on until late afternoon. Provided that a trial run was carried out, the representatives of the cantons and municipalities agreed with the verdict that the new statistics on foreigners were technically possible. During the discussion, however, they noted that time would be short even if cantons and municipalities could be legally compelled to participate in the trial run. A working solution would surely take more time. Keller took a different view and announced that there would be no further meetings.[25]

As the minutes show, an extensive trial run was particularly a concern for the large municipalities and cantons, which had already automated their resident registration and aliens police authorities or were about to do so. They feared that a centralized registration process could lead to further shifts in competence toward the federal state. Before the report could be accepted by all members of the commission, a lengthy consultation process was necessary. Finally, the representatives of the cantons and municipalities expressed their support, as the final version of the report stated that various technical and organizational problems had yet to be clarified because the time available was too short or the analysis of the problems would be too costly. It was

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23   Ibid.
24   BAR, Minutes of the 2nd Session.
25   Ibid.

also noted that reliable functioning of the statistics depended on thoroughly training the community.[26]

The promise of an automated migration policy was a rather vague and fragile compromise. Moreover, during the work of the commission the fronts had hardened. On one side were the administrators and planners of the federal administration who preferred a quick, technical solution to a political problem and were convinced of the top-down approach. On the other side were the representatives of the cantons and municipalities who could imagine neither that anything would change in the legal status quo – the extensive competences of the cantons – nor that a quick technical solution to the political migration problem was possible. The new statistics on foreigners depended on acceptance by local authorities and would only be successful if adapted to their processes and structures. However, little of this conflict was evident in the final report.

A final report, but still many questions

In March 1967 the report was distributed to all the authorities involved. The new statistics on foreigners were to combine the labor market statistics collected by the Employment Office since 1949 and the social statistics collected by the Aliens Police since 1964. None of the existing statistics represented the total number of foreigners living and working in Switzerland. The labor market statistics lacked non-employed foreigners. Social statistics did not include foreigners with short-term residence permits or cross-border commuters, who were not subject to mandatory checks. This gap in data collection would become even wider due to the new provisions of the migration agreement with Italy. The experts reckoned that in future more foreigners would have to be released from the obligation to undergo checks and that more non-employed foreigners would settle in Switzerland as a result of sim-

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26   BAR, Minutes of the 1st Meeting; Minutes of the 2nd Session. Basel City already had a system in place in the mid-1970s that allowed recording of population mutations on screen and in real time. State Archives Basel-Stadt, FD-REG 8a 2–2 (1) 15/2, Project Group Population On-Line Mutations. BAR, Minutes of the 1st Meeting, First Draft; Report of the Expert Commission, Second Draft.

plified family reunification. The new statistics on foreigners should therefore cover all foreigners residing in Switzerland.[27]

The low collection rate of existing statistics was also seen as a problem by the Expert Commission. Since the 1960s, the Federal Council had been intervening more and more in cantonal labor market and admissions policy. The interventions were defined and implemented by the Employment Office. For this purpose, reliable and regularly collected statistics were needed. The new statistics on foreigners had to be updated on an ongoing basis. Ideally, at the end of every month, electronic processing would enable quick production of a detailed analysis.[28]

The structure of the new statistics on foreigners provided that all foreigners, i.e., all non-Swiss nationals with work, residence and settlement permits, be recorded in the system on a key date and the data stored on magnetic tape. In a next step, the data was to be compared with the data of the Social Security Register in Geneva and adjusted. Based on this «master tape», changes would be entered on an ongoing basis. In addition, statistical analyses tailored to «factual and temporal» needs were to be produced each month and shared with the cantons, municipalities, and federal authorities.[29]

This scenario was hypothetical for logistical reasons alone: the likelihood of being able to count one million foreigners or their permits on a specific date was at best illusory, even with the support of the cantons. Comparing this data against that of the Social Security Register was also wishful thinking. Although the Social Security Register wanted to acquire a computer for automatic processing, the planning was not very far advanced. This naturally left unanswered the question of how the data would be transferred from Bern to Geneva. Networking the two offices via a dedicated line was not even on the horizon. And transmission in paper form or by telephone was not only costly but also prone to errors.[30]

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[27]   BAR, Report of the Expert Commission.

[28]   BAR, Report of the Expert Commission. Jost has examined in detail the prominent role of the Employment Office vis-à-vis Swiss economic and social statistics and describes it as autonomous and very close to the economy. Jost, Von Zahlen, Politik und Macht, pp. 94–97.

[29]   BAR, Report of the Expert Commission.

[30]   BAR, Minutes of the 2nd Session.

The choice of method for keeping the register, too, showed that the experts were unconcerned about data logistics. The «permanent inventory» method originated in accounting and required that all inventory data be kept centrally and on-site in Bern. In addition, new information or changes had to be continuously collected and transferred to the master tape every evening. This procedure was intended to guarantee that the data on the master tape was always up-to-date. It should also lead to a low error rate, as it was rare for two changes to be made to the same personal data record on the same day.[31]

Based on this daily updated master data set, the statistical analyses would then be carried out. The following questions would be answered daily: How many foreigners stayed or settled in the canton in a given year? How many of them were children? How many adults? What was the change in foreign population compared to the previous year? What were their countries of origin? How many foreigners with a residence permit were gainfully employed? How many foreigners with a settlement permit were gainfully employed? In which sectors were they employed? What professions did they pursue? These were mainly questions relating to the structure of the labor market.

The expert report also stipulated that entries and changes should be recorded in the municipalities and cantons and only be transmitted to the Computing Center in Bern for processing. It was argued that both the initial entry and the ongoing changes could be checked for accuracy more quickly locally, because it was often necessary to contact employers and landlords to verify the data. The short physical distance and the knowledge of local peculiarities seemed a compelling argument. The experts were also convinced that centralizing the collection of data would lead to an excessive increase in the number of staff in Bern.[32]

Decentralized data collection meant that the communes and cantons would not send forms with registration or change notifications to the Aliens Police. Instead, they would independently transfer the completed forms to an electronically processable medium. In this way, all registration and change

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31   BAR, Report of the Expert Commission.
32   Ibid.

notifications would be collected in the respective offices and transferred to punched cards or magnetic tape. At the end of the month, these would be sent to the Computing Center in a collective consignment. The Computing Center would receive all entry and change notifications from the various offices and process them electronically on an ongoing basis. A few days later, stock lists would be printed out for each office and statistical analyses would be conducted. These analyses would then be made available to the offices by post. The report makes no mention of the frequency of analysis for the Employment Office or the Aliens Police.[33]

The report estimated the personnel requirement for the register at forty to sixty employees. About twenty of them were alphabet punchers. The total costs would amount to over two million Swiss francs. Even for a short report of 21 pages, these were extremely vague estimates of expenditure. Trained personnel in the field of electronic data processing were very rare and expensive. The experts were aware that in times of a shortage of skilled workers in the IT sector, it was unclear whether enough qualified personnel could be found. Moreover, the new statistics on foreigners would become one of the most expensive automation projects of the entire civil federal administration.[34]

The experts did not share the Organizational Staff's doubts about the legal foundation. They saw a sufficient basis for the first survey in the Statistics Act of 23 July 1870. For the operation of the register and the recording of current changes, the Aliens Police were given sufficient authority by Article 23, Paragraph l of the Federal Act of 26 March 1931 on the Residence and Settlement of Foreigners.[35]

The consensus expressed in the final report of the Expert Commission was relatively sparse. All members agreed that the current labor market and social statistics were inadequate and that better statistics should be produced as soon as possible. There was considerable disagreement on how such statistics and data collection should be implemented, apart from a few technical specifications such as centralized data management and the register manage-

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[33] Ibid.
[34] Ibid.
[35] Ibid.

ment method. The federal administration seemed confident that political pressure from the over-foreignization initiative would pave the way for a new technical solution. The cantons and municipalities seemed convinced that the legal status quo would remain intact and that the cantons could continue to implement their own entry policies. For this reason, the final report left important technical and organizational questions open, in particular questions of data logistics, which are central to an information infrastructure.

The Federal Council retakes control

The authorities involved were obviously keen to circulate the Expert Commission's report as soon as possible. Thanks in part to the popular initiative, for which the Federal Council was busy formulating a recommendation, the subject of over-foreignization was omnipresent. The Employment Office and the Aliens Police wished to exploit the momentum and urged the Federal Council to proceed with the new statistics on foreigners. It was imperative to launch a trial run of the new statistics on foreigners in a small area as soon as possible. The outcome should then serve as the basis for a decision on the overall project.

In the meantime, Elmar Mäder, director of the Aliens Police, applied for twelve full-time positions at the beginning of April to introduce the new statistics on foreigners. In the application he also mentioned that the circular letter of 1 January 1967 had already centralized the statistical recording of newly issued residence permits for non-active foreigners. For this policy, an application for an increase in personnel by two full-time positions had already been submitted in the middle of the previous year. In this way, the Aliens Police had moved forward and tried to set precedents for the institutional integration of the new statistics on foreigners.[36]

By then, all the agencies involved as well as the Federal Department of Justice and the Federal Finance Administration had weighed in on the expert report. With the exception of the Employment Office and the Aliens Police, all the authorities were critical. Precise deadlines and a detailed budget were lacking. In view of the high costs, a well-planned trial operation was essential

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36   BAR, E6270B-01#1981/186#206*, Letter of 10 April 1967.

but could not be implemented in the foreseeable future. Too many technical and organizational questions were still unresolved. In addition to the resistance of other authorities, the over-foreignization initiative began to lose support, and the pressure to implement vigorous measures to restrict migration eased. On 29 June 1967, the Federal Council recommended that the initiative be rejected and announced a policy to restrict immigration. The new measures included a quota of foreign workers for each company that was calculated on the basis of previous years and could not be exceeded. New statistics on foreigners were unnecessary for these measures.[37]

The Aliens Police and the Employment Office wished to implement the new statistics on foreigners as quickly as possible and pushed ahead with their departments without authorization. Consequently, disagreement between the Department of Economic Affairs and the Department of Justice arose. In a strongly worded communication, Mäder and Holzer were urged to stick to official channels. No personnel budget would be discussed until further notice. This was a defeat for the Aliens Police and the Employment Office. The Statistical Office now profited from this discord. As it was neither part of the Department of Justice nor the Department of Economics, but rather the Department of the Interior, it was able to act as an independent and impartial party. The Federal Council instructed the Statistical Office to clarify the costs of the trial run and continuous operation as well as the open technical and organizational questions.

At the beginning of January 1968, the Statistical Office began to collect, prioritize, and process the questions that the expert report had left open. After the Aliens Police and the Employment Office had made many decisions on their own initiative, the process now returned to the official channels of the administration. Other authorities were involved from the outset, and the administrative procedures and protocols were followed. This was explicitly recorded in the minutes. Only when all points had been clarified should the

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37   Amtsdruckschriften, Volksbegehren gegen die Überfremdung. Bericht des Bundesrates, Vol. 4, Bern 1967, pp. 529–546.

new working group prepare its report. The draft was to be submitted to all authorities involved.[38]

When the Federal Council implemented the already announced restrictive measures on 28 February, the concern about Switzerland's over-foreignization initiative seemed to fade again. A few days after this announcement, the National Action withdrew its popular initiative. But the calm was short-lived. There was disagreement within the National Action about how to proceed. On 15 May 1968, James Schwarzenbach, a member of the National Council representing the National Action, launched a second, more radical over-foreignization initiative called the Schwarzenbach initiative. In contrast to the first popular initiative, the new initiative contained no withdrawal clause. In addition, the wording was more precise to make it harder to interpret the constitutional article in an immigration-friendly manner. This initiative gave new momentum to the discussion on new statistics on foreigners.

In October 1968, the Statistical Office submitted the first preliminary report of just under four pages to the Federal Council. The responses were brief and diplomatic. It would be possible to compile the statistics required by the Aliens Police and the Employment Office. The most fundamental registration offices would be the resident registration offices in the municipalities. The Aliens Police would act as a central collection and control point, coordinating the exchange of data with the cantons and communes. The Computing Center would run the new information system, carrying out the analyses and taking over the punching and checking of the documents. Thus were the most important open questions answered. A time schedule for the trial run could be determined, and the costs would not exceed the estimates of the expert report.[39]

The Federal Council decided to continue its investigation of the Statistical Office. In only three months, the Statistical Office, the Employment Office, and the Aliens Police agreed on a compromise solution. In January 1969 they submitted their final report to the Federal Council. A Central Aliens

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38   BAR, E3321–01#1985/36#47*, Memorandum to the Meeting of 15 January 1968 on the Procedure for Clarifying Open Questions in the Report of the Expert Commission for Statistics on Foreigners.

39   BAR, E3321–01#1985/36#47*, New Statistics on Foreigners.

Register was to be created (Fig. 3). The Aliens Police would be given the lead responsibility for this project. Together with the Employment Office and the Computing Center, the Aliens Police would prepare various interim reports for the Federal Council: the first after discussions with the cantons and communes, and the second after trial runs with selected cantons. Both reports were to be submitted within one year.[40]

With this proposal, the Federal Council defused the conflict that had arisen between the federal administration and the cantons and municipalities. A one-year trial run would be carried out. All authorities involved were to be given a say. Expenditures would be distributed as evenly as possible between the Computing Center, the Aliens Police, and the cantons. Responsibility for the project was to be transferred to the smallest authority within the federal administration. In addition, the cantons and municipalities were to be given a voice by being an integral part of the co-reporting procedure and the pilot phase.[41]

The report also contained a timetable that showed not only the project milestones but also an estimated distribution of expenditures over the coming years. The total amounts did not differ significantly from the estimates in previous reports, but the costs were broken down more precisely and compensation for the local authorities was defined.[42]

What the report did not contain, however, was a clarification of the pressing legal issues. The Statistical Office was still convinced that neither the Statistics Act nor the Federal Law on the Residence and Settlement of Foreigners provided a sufficient legal basis. In the report these concerns were reduced to a statement that the legal basis would be sufficient, provided the Federal Council adopted the information system by the end of January 1970. The question of which laws would have to be created and whether this would limit the competence of the cantons was not raised. The timetable for the information system seemed to have been adapted to the political situation.

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[40]   BAR, E3325–02#2013/10#23*, Activity Reports of the Computing Center; BAR, E3321–01#1985/36#62*, Co-Reporting Procedure; E3321–01#1985/36#84*, Summary Final Report.
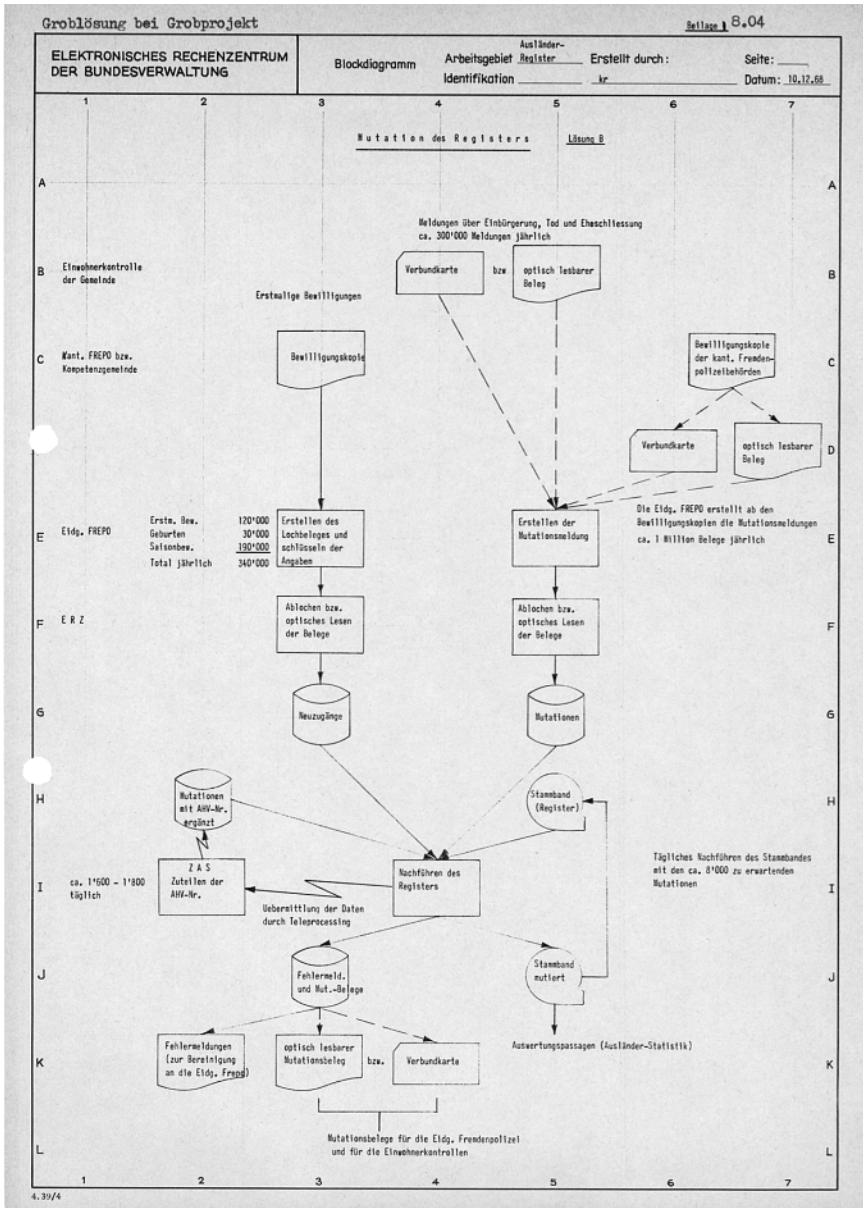
[41]   BAR, Summary Final Report.

[42]   Ibid.

Fig. 3: Technical draft titled «Rough Solution for Preliminary Project» for the new statistics on foreigners (Swiss Federal Archives, E3325–02#2013/10#146*).

The second over-foreignization initiative, which aimed to radically limit migration, enjoyed a great deal of popular support. The Federal Council feared that approval of the initiative would mean major economic losses for Switzerland. The government was under increasing pressure.

Promise gives way to reality in the cantons

On 28 January 1970, the Federal Council commissioned the ZAR information system and, with a budget of over two million Swiss francs, approved the most expensive statistical information system to date. The mandate also included drawing up the missing legal basis for operating ZAR. In so doing, the Federal Council followed the final report of 1969 in all important points. The return to official channels and the political pressure exerted by the popular initiative had led the Federal Council to approve the trial operation. All on condition that the cantons and municipalities were involved in the implementation process from the outset.[43]

Meanwhile, the public debate continued to intensify in the context of the Schwarzenbach initiative. On 16 March 1970, the Federal Council responded to the pressure and tightened entry regulations for foreign workers throughout Switzerland. The nationwide restriction on immigration stipulated that foreign workers should be fairly distributed among the cantons according to economic and demographic needs. The labor market statistics of the Employment Office and the social statistics of the Aliens Police were used as the basis for calculating the distribution formula. In other words, the statistics were still compiled by hand at irregular intervals, a process that was too inaccurate and too slow in the opinion of everyone involved. The explanation was that the new statistics based on ZAR were still the subject of extensive planning meetings with cantons and municipalities.[44]

The negotiations with the cantons and the largest municipalities were a great challenge for a small federal authority like the Aliens Police. It did not have the necessary knowledge to negotiate the technical and organizational details of the upcoming trial run. A ZAR working group was set up to chan-

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[43]   Ibid.
[44]   BAR, E3321–01#1985/36#103, Guidelines for Filling in Registration Forms.

nel the negotiations. This body, consisting of members of the Aliens Police, the Employment Office, the Statistical Office, and representatives of the cantons and communes, met at irregular but sometimes very short intervals. The group exchanged views on the work to be done and made technical and organizational decisions concerning the register.[45]

Most of the time in the meetings was spent resolving issues related to migration authority work in general, with little impact on ZAR: How should foreigners who left Switzerland or changed cantons without signing off be recorded? Should employers and landlords be obliged to report sign-offs to the authorities in addition to registration? How could small municipalities with part-time staff cope with the administrative burden? Could families continue to be registered using the family form, or did a separate form have to be completed for each person? Were the fees for the cantons and communes of 70 centimes for the initial registration and 20 centimes for the notification of a change appropriate?[46]

The discussions revolved around the everyday problems of the authorities on the front line. The only technical artifacts that were discussed very intensively were the new, uniformly designed, machine-readable forms for the initial and change notifications. The forms not only provided a semantic platform for the cantonal and municipal authorities to agree on common processes and interfaces but also represented the interface to ZAR as data supplier. Most of the authorities concerned would fill in the notifications by hand and send them by mail to the Aliens Police in Bern. Only a handful of authorities, mostly from large municipalities, expressed any interest at all in automated data transfer. The representatives of the Aliens Police were certain that authorities that already had an automated and centralized control system in place or were planning to do so would not cause any major problems in connecting to ZAR. Rather, the police worried about the smaller authorities, which processed everything by hand.[47]

The discussions took more time than expected, while the Federal Council pressed for the trial run to take place earlier than planned. Both the Aliens

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45   BAR, E3321–01#1985/36#84, Report to the Federal Council of 3 December 1970.

46   Ibid.

47   Ibid.

Police and the Computing Center had overstretched themselves and were working at the limits of their capacity. The performance requirements for ZAR, as formulated a few years earlier by the Employment Office and the Aliens Police, had to be continually adjusted: registration of cross-border commuters, automatic assignment of AHV (old-age insurance system) numbers, and several tabular programs for special statistics were postponed to a later project phase. The goals of the federal authorities were pushed to the background. The success of the project depended solely on whether current and reliable figures from the cantons and municipalities could be compiled during the trial run.

The trial run itself was a balancing act. On the one hand, the technical feasibility had to be demonstrated; on the other hand, the new system had to be accepted by the cantons and municipalities. Without the full support of the cantons, it would not be possible to meet the schedule. Making the trial run as realistic as possible from a political and technical point of view, small as well as large, and manually as well as automatically, required the participation of the operating authorities. Various cantons made themselves available, and the final choice was made for Lucerne, Basel City, Grisons, and Neuchâtel. It was a balanced, Helvetic selection. Lucerne represented Catholic-conservative Central Switzerland, Basel was a large industrial city with a technically advanced population control system, Grisons was a large and rural canton from the south of Switzerland, and Neuchâtel represented the French-speaking part of the country.[48]

On 4 March 1971 the Aliens Police announced the ambitious timetable for the trial run. Within just one month, the four cantons were to clarify the organization and evaluate training materials for staff. From May to August, employees were to be trained in the municipalities. An inventory of all foreigners subject to controls in the canton of Lucerne was to be drawn up as early as 1 September. The other cantons would follow in the last quarter of the year. This meant stress not only for the test cantons but also for the Aliens Police and the Computing Center. The forms, envelopes, and training materials had to be printed in sufficient quantities after the final editing and distributed to the cantons. Adjustments to the forms or the survey process

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[48]   Ibid.

always meant programming work for the Computing Center and could delay the trial by several weeks. In addition, the Aliens Police had to formulate and circulate the rules applicable to the cantons by circular letter.[49]

The Aliens Police quickly reached the limits of its capacity with the planning of the trial run. The situation came to a head because politicians and the Federal Council were pushing the pace. In order to avert acceptance of the Schwarzenbach initiative, effective policies had to be defined quickly and their effectiveness demonstrated with up-to-date figures. For these reasons, the technical issues took a back seat and the planning of the trial run focused primarily on migration police matters. These compromises served to water down the vision of an automated migration policy and signaled a return to the slow and incremental change that the federal system was accustomed to.

Conclusion

The planning of the ZAR information system was characterized as a negotiation process between the federal administration and the cantons and municipalities on the design of Switzerland's federal migration regime. The planning process for the information infrastructure and especially its technical artifacts provided a platform for presenting the expectations of the various stakeholders and agreeing on a consensus solution. This process did not proceed in a linear fashion, but in phases marked by sharp breaks.

In a first phase from 1964 to 1967, the federal administration dominated the discussion in the person of Employment Office director Max Holzer. The vision of automating migration policy appeared to Holzer to be feasible in view of the pressure from both domestic and foreign policy. In 1964 a new treaty with Italy committed Switzerland to unifying its migration regime in favor of foreign workers, and the National Action's xenophobic popular initiative led to a tightening of migration regulations. Holzer was convinced that sooner or later the cantons would forfeit their constitutional right to issue work, residence, and settlement permits. He wanted to anticipate this de-

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49   BAR, E4300C-01#1998/299#31*, 1st Meeting with the Trial Cantons of 4 March 1971; E3321–01#1985/36#103*, Circular Letter from the Aliens Police of 1 July 1971.

velopment with a technical solution and set a precedent. His approach seemed to overestimate political pressure and underestimate the power of the federal status quo.

The solution proposed in the final report of 1967 had been worked out mainly on the drawing boards of the federal administration's statisticians. It required centralized structures and took little account of the realities of the federal periphery. The redesign of the federal migration regime was seen not as a political problem but as a technical one. The description of the new information system in administrative and technical terms made it difficult to involve the cantons and the municipalities in the planning process. The technical description deflected attention from the political consequences of this information system and the corresponding policies for the parties.

But precisely where the information system interfered with the processes and organizational structures of the authorities in the cantons and municipalities, there was great resistance to automation. The new migration policy that the technical design required was perceived by those involved as political rather than technical. In the eyes of the cantons and municipalities, too much power and data were concentrated in Bern. The new system was in conflict with the constitution, which placed work, residence, and settlement permits within the jurisdiction of the cantons. The Employment Office and the Aliens Police tried to ignore these concerns. Moreover, in order to reach a consensus as quickly as possible, important organizational and technical issues were excluded from the discussion and postponed until trial operation.

The indeterminate nature of the report and the haste with which the Aliens Police took action were the main reasons the Federal Council intervened in 1967 and transferred project management to the Statistical Office. The Statistical Office was part of the Federal Department of the Interior and thus independent of the Department of Economics and the Department of Justice. It concentrated on technical implementation and, in contrast to the Employment Office and the Aliens Police, was not involved in renegotiating Switzerland's federal migration regime at the policy level.

Thus, between 1967 and 1969 a solution was found which was also viable for the cantons. Not much remained of the visionary claim to automate migration policy. The information system was to replace the existing statistics without major adjustments in the cantons and municipalities. The operation of the register was to be entrusted to the smallest federal authority in-

volved, the Aliens Police. In addition, the local authorities would be adequately compensated for their efforts and the federal administration would take care of local training. The demand for radical control of migration flows had given way to the federal reality in which cantons and the federal administration negotiated a compromise.

In 1970, the pressure on the Federal Council increased. The Schwarzenbach initiative, which would have capped the population share of foreigners at 10 % and would have forced hundreds of thousands of people to return to their home countries, found broad support among the voters and threatened to pass. On 28 January 1970, the Federal Council gave the green light for the new information system and demanded that the trial run be implemented sooner than planned. On 16 March, the Federal Council decided on a relatively radical, nationwide restriction on immigration. The policy was aimed at reassuring voters and preventing passage of the Schwarzenbach initiative. The policy required calculating the maximum number of aliens to be admitted on a monthly basis. These quotas could then be fairly divided among all the cantons. As long as ZAR was not yet fully operational, the old «overforeignization statistics» of the Aliens Police were to be used as a basis for calculating the quotas. Even before the trial run had begun, ZAR was already an integral part of an important policy. This also meant that any decision taken in the trial run would have direct consequences.

The trial run was planned for 1971. The time leading up to it was marked by further negotiations on the design of Switzerland's federal migration regime. The federal administration as well as the cantons and municipalities now had to agree on specific protocols and processes. In the discussions on data logistics and the interfaces to the ZAR information system, the basic features of an information infrastructure that would be in place until 2008 were defined. Many discussions revolved around technical artifacts such as machine-readable forms that could be filled out in pencil, and how to deal with inquiries about data. For most cantons and municipalities, forms were the most important interface for exchanging data, alongside the telephone. In 1974 the trial run was completed and ZAR was put into regular operation. This completed the planning but not the development of ZAR. As an information infrastructure that was in daily use by various authorities, it had to adapt not only to the changing policies of a highly dynamic federal

migration regime but also to technological changes that shaped the organization and operation of the federal administration.

The planning of the information infrastructure for ZAR was not a linear process, nor was it done by the book. At no time were the requirements conclusively defined; the system design was developed only shortly before the trial run and had to be adapted several times during it. Rather, infrastructure planning for ZAR was a process of negotiation that engaged various actors over several years and was subject to the vagaries of politics and technological change. Various technical artifacts played a decisive role in this process. What was decisive was not the frictions and barriers created by the specific nature of ZAR. What was decisive was that the technical artifacts offered a semantic platform for the negotiation process. The forms, data logistics, processes, and protocols from the daily work of the migration authorities offered tangible subjects for discussion. In contrast, the promise of an automated migration regime, which was dominant in the early planning phase, was merely a project space filled with the desires of all involved parties.

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The history of federalism in the digital age unfurls against a complex backdrop of dreams and expectations, cooperation and conflict, and preservation and change. Throughout this history, a range of individual and institutional actors in pursuit of a common goal are forced to grapple with a constantly shifting balance of resources, technologies, and responsibilities.

Contributions deal with topics such as the relationship between and among states, information, and computers; federal dealings with respect to migration and university policy; and the social and political coordination required both locally and nationally by high-performance computing. The editors' introduction reflects on how different forms of autonomy and authority were negotiated to achieve the benefits of digital technologies within social and material spaces.

With contributions by: Gabriele Balbi, Paolo Bory, David Gugerli, Ely Lüthi, Moritz Mähr, Nick Schwery, Laura Skouvig, Ricky Wichum and Daniela Zetti

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