The Danish Tax System and the 'No Touch Strategy'

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Abstract. In 2004 the Danish Tax Administration won the Danish e-Business price for the successful implementation of the 'No Touch' IT solution TAST-SELV, which provides the Danish Tax payers with a unique, fast and accurate solution handling for pre-assessment of income and tax declarations. This paper describes the milestones towards this result that is based on several decades of development of the basic IT support for the IT solution that developed into a World Class taxation system.

1 The Early Days - Birth of Datacentralen

In the late 1950s the social democratic Government had a strong focus on creating a true welfare state. One of the major challenges was the increasing pressure on the costs from the large number of children from the 'Baby Boom' of the late 40s and the combined fact that the influx of women on the labour market also led to an increased need for public childcare as well as health care costs. Because of the increased need for public financing, the efficiency and accuracy of the taxation system had to be improved.

The major political and administrative challenge was to create a fair taxation system, which at the same time should be capable of handling even a moderate inflation, which called for a better alignment between wages paid and tax collected. The taxation system at the time was based on a personal self-declaration based on last year's income with deduction schemes for interest rates and other costs. In 1956 one of the most important welfare legislations was passed dealing with General Pensions for everybody from the age of 69 with a guaranteed minimum payment independent of the personal income. The legislation came into effect in 1957, adding to the pressure on how to finance the welfare state.

The administrative experiences with 'EDP' at that time were based on large-scale Punch Card solutions for salaries, statistics and financial systems. Up to this point, these applications had been successful, but due to the foreseen complexity of the new Taxation system, it was obvious that a modernisation had to include the use of newer technology.

In 1958 Viggo Kampmann, the Minister of Finance, sent a confidential letter to IBM Denmark and invited a consultant to assist the Ministry in analyzing and defining necessary foundations, pre- conditions and barriers for introducing a 'pay-as-you-earn-taxation system - PAYE. The letter to IBM stated that the information had to be treated confidentially, as the Parliament at that time had not been informed yet. IBM Denmark appointed the Government Lead Sales Specialist, Willy Olsen, as a member of the investigating team and as a lead consultant for the 'secret committee'.

The committee stated, that in order for an effective 'Pay as You Earn' system to work it would be necessary to have a unique identification of each taxpayer, a unique identification of each employer, a compulsory notification of salaries - and because of the need to collect taxes as part of the salary, also a close cooperation with the Financial sector was necessary.

One of the main recommendations from the Committee was to ensure a close cooperation between state Government and municipalities – partly because the Tax assessment was a municipal task, the quality of which the central Government wanted to improve, and partly because of the major costs involved in launching a 'real' EDP -solution.

This led to the creation of I/S Datacentralen on December 17, 1959 as a joint Central/Local government venture with the task to acquire 'computers' and develop and operate the new tax system and related supporting systems. The first managing director of I/S Datacentralen became Mr. Willy Olsen. The Board of Datacentralen was left with the difficult task also to coordinate and approve use of 'computers' acquired by the local Government organisations. Regional Punched Card centres were at that time already established around the country and soon developed into regional EDP-centres.

2   Supporting Systems and Launch of the PAYE

As it was a clear prerequisite for an effective IT solution that each tax payer could be easily and uniquely identified, the first important step was the launch of the Central Personal Registration System, CPR. Parliament approved the act of CPR in June 1968, but in fact the work had already started in 1965 under 'The Secretariat for Personal Registration' based on the recommendations from 1963, 'Betænkning om Personregistrering'. As a prerequisite the municipalities were forced to convert information contained in traditional index files to punched cards before September 1967. In October 1968 Personal Identification documents were distributed to all Danish citizens. The key information was the citizen's identification number, based on birthday, a serial number where an odd end number signified a male citizen and an even end number a female. A modulus 11 check ensured a way to assist automatic control of validity of the CPR number.

But another prerequisite for a PAYE tax system was of course the identification of the employers, as it would be based on their accounting systems to withhold tax based on the current income.

Already in 1964 this hurdle was at least partly overcome, when the Law of income related additional pension, ATP, was passed. The purpose was to decrease the burden of the public sector to pay out pensions to everybody, and the ATP system ensured that employees would co-finance their own pension. The employers had to withhold a fixed amount of the salary paid to each employee. Because of this, a register of Companies and Employers was established (CIR - Det centrale Indeholdelsesregister). This later (in 1999) developed to CVR, the Central Company Register containing detailed descriptions of companies, owners, directors etc.

The PAYE system was launched - not in 1969 as originally planned, but in 1970. This coincided with the start of the first major administrative reform, where the number of municipalities was reduced from 1300 to 277. As it was still the responsibility of the municipalities to assess declarations for citizens covering other items than direct salary,

the IT architecture had to be re-designed concurrently with the mergers, so in effect the PAYE tax system was split between local authorities and the Central Tax authorities. Datacentralen established a PAYE department in Birkerød, where the tax department of the Ministry of Finance was also placed.

In parallel with the municipality reform the regional and local Government EDP-centres were merged into one organization named KOMMUNEDATA (later KMD). The city of Copenhagen and the City of Aarhus kept their regional DP centres. In spite of the original guiding principles from Datacentralen, stating that all major EDP investments in local Government had to be approved by Datacentralen, the increase in local government administrative tasks made this expansion necessary. One of the major new municipal tasks was the new law on social security/illness insurance for every-body, and this became Kommunedata's largest project so far.

3   Improvement of the PAYE - Attempts to Centralize Control

In 1972 a report was published from the committee responsible for analyzing the PAYE system and suggesting improvements. (betænkning 638, April 1972). One of the key persons in this commission was Hans Westerberg, who later became director of the PAYE system. The report contained a number of recommendations on how to improve efficiency and how to create a system that as far as possible made additional payments unnecessary and at the same time eased the burden of control. Hans Westerberg and his IT manager started a long period of step-by-step improvements and automatic collection of data from a large number of sources, most important from other government registers and banks. His work was the real foundation for the development of the 'no touch' tax idea.

In the late 1970s the discussions between the central taxation authorities and the municipalities accelerated. Kommunedata had launched a terminal based intranet system for the municipalities (SIP – Skatter, Indkomst, Person oplysninger) for com-bined access to tax, income and citizen data based on the decentralized registers operated by the regional centres, while Datacentralen supported a centralized system to ensure up-to-date information and avoid duplication. A new committee on co-regulation of the area was set to work, and as the central government representatives had a majority, the recommendations were to back the Datacentralen approach. However, this did not convince the local government organisations, that regarded the recommenda-tion as a threat for local authonomy.

The central government representatives wanted a completely centralized solution where all development, operations and location of the tax/income registers were placed at Datacentralen. The local government representatives wanted a decentralized solution where information from the central income/tax databases could be combined and compared with accounting information residing at the municipalities' files. The conflict between Datacentralen and Kommunedata was in reality a conflict between central-ization and decentralization. (EDB Samordningsudvalget - om styrelsen af statslige og fælleskommunale registersystemer maj 1977 and Mogens Brabrand Jensen, 1984).

In 1981 the Central Government/Ministry of Finance agreed with The Association of Municipalities and the city of Copenhagen to establish a committee with the purpose

of defining common guidelines (Read: 'Enterprise Architecture Standards') for the IT decisions made by Kommunedata, Datacentralen, and the city of Copenhagen. An attempt to create a common organization failed, and a number of tax related tasks still remained at municipal level.

In 1983 the central Government expenditure for IT was estimated to 760 Mio Dkr. of which the Tax system accounted for a total of 161 Mio kr. We have the figures for the municipalities' and counties' use of IT in 1985, totalling some 673 mio Dkr., of which personal taxation system accounted for 11% or 93,6 mio Dkr. The number of applications in local regional Government was much higher than for central Government, explaining the interest from the local govt. politicians to maintain the power over their regional IT centres and the application development.

So for many years the conflict between local and central tax authorities continued, while the Tax department at the ministry of Finance, later Ministry of Tax kept improving automatic updating of income-relevant information and gradually reduced the need for local information and databases concerning income, tax and tax related debt. All these step-by-step solutions cleverly administered by the Central Tax Authorities helped create the foundation for the 'no touch' tax system and avoided to repeat the conflict between the political owners of Datacentralen and Kommunedata.

4   Dawn of the Internet - the 'No Touch' Strategy

In 1993 the reorganized department, the Central Customs & Tax Authority (CCTA) launched the first voice response system offering citizens the ability to check and change their pre-assessment of tax using the telephone. Security was provided via a pin code printed on the pre-assessment form. Until now CCTA received all reports from citizens on paper, and payments - incoming as well as outgoing - were made using the Giro System. The citizens had no direct access to their own data when they wanted to check these or to send in a report. They had to wait for the annual settlement before they could see the basis for the taxation.

As this obviously also represented a heavy administrative burden on the CCTA, the digital self-service strategy was launched 1995, and the mission statement was to ensure public revenue in a simple, efficient and correct way. The principles behind this effort were to ensure (1) a **simple** and automated process and only disturb customers (!!) when unavoidable, (2) **efficient**, best and low priced service within the financial framework offered to CCTA, (3) **governed by the rule of the law** to ensure customers are treated promptly, correctly and uniformly and protected according to the law. Further, (4) i**ndividualized service**, reflecting that customers have different abilities, and (5) **service oriented** in the sense that CCTA wanted to meet the customers according to their needs - personally, by phone or by 24 h digital self-administration.

The gradual development of the 'No Touch' TASTSELV system was based on the voice response option as well as the browser option via the Internet (since 1995). The browser option became the foundation for a long range of subsequent services, initially focusing on submitting tax returns and changes of pre-tax assessment based on access to an individual, digital tax folder. The back end of the system was not visible for the citizen, which provided the somewhat complicated technical split of processing

between KMD (which changed it's name from Kommunedata) and DC (Datacentralen also changed it's name).

This was made operational by introducing a component-based architecture that defined the interfaces and data standards ensuring interoperability between the back end systems.

Encryption was introduced from the outset (for the browser option) based on a 128 bit SSL via proxy server. This was at the time considered a high level of security.

This solution soon proved to be a huge success: already in 1996 more than 600.000 tax payers took benefit of the TastSelv solution. In 2004 the CCTA solution won the e-Government Prize for the best public solution of the year. Some of the reasons for this award (2004) stated:

The total census of the year was 4.635.012 taxable persons, of whom 4.585.331 are natural/real? persons. Of those an amazing 4.007.796 received a pre-filled tax form, corresponding to about 86 %. Of these, 2.5 million of the forwarded, pre-filled tax forms were accompanied by an annual settlement. These citizens do not have to do anything regarding their tax return. Some 430.000 persons made corrections to their pre-filled tax return.

In 2008 Tax (Danish SKAT as it is now called instead of CCTA) made a customer satisfaction survey to check their image in the Danish population. The overall response showed that 4 out of 5 Danes consider the Danish Tax system to be fair and just, while 1 out of 6 believe the opposite.

60% of the Danes agree that the tax system is working well/efficiently, 25% neither/nor.

5   Conclusion

The tax system for individual citizens has become gradually more and more automated to ensure the original intention behind the 'No Touch' strategy, originally defined by Hans Westerberg and Somani, but also for private companies. A lot of tax related information is automatically collected.

The success of the 'No Touch' strategy seen from the citizens' point of view can hardly be debated, and it is interesting to combine the general acceptance of the tax system being fair and just with the list of income related information, which today is being handled directly between the tax authority, the employers, financial institutions and pension companies. This list of automatically collected data will in some countries lead to a strong protest, but obviously not in Denmark.

The following data (and more) are automatically transferred to the citizens individual digital tax folders:

Declared taxes, paid taxes, mileage allowance, deductions, contributions, trade union and unemployment fund fees, VAT, controlling shareholder info, interest received and paid, bank deposits, reported info on assets, shares and funds, interest on financial assets abroad, portfolio of shares, unit trusts, financial contracts, interest paid and outstanding debts, equity, self pensioning schemes, occupational pension schemes, taxable benefits, tax deductible benefits, property value and taxation, tax exempted benefits, car ownership info, salaries, pensions, travel allowance, student grants and loans...

In 2004, the year the Tax system won the e-Government award, the second major structural reform of Denmark took place, reducing the number of municipalities from 277 to 98 and reducing the number of counties from 14 to 5 regions. At the same time, the municipal tax departments were moved to regional centres directly controlled by the Ministry of Taxation. Since then, the payment system including collection of debts and any return payment to citizens has also been centralized, still leaving some administrative tasks (like property taxation) with the municipalities, but centralizing all tax-related IT development and operations (Figs. 1 and 2).
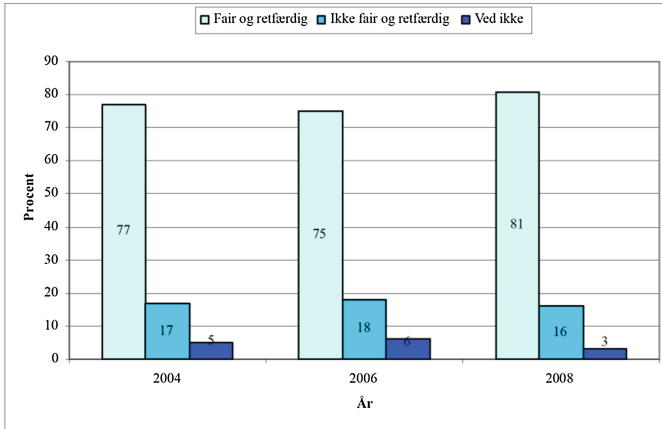

Fig. 1. Do you consider the Danish Tax system to be fair and just? Light blue: fair and just, blue: not fair and just, dark blue: don't know (Color figure online)
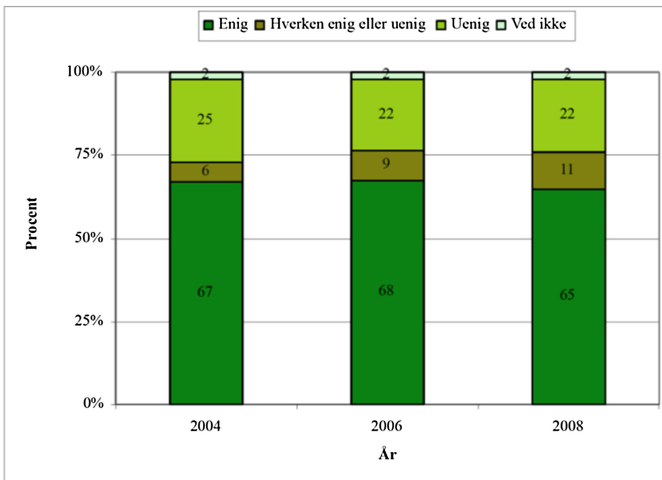

Fig. 2. Do you agree that the declaration is easy to manage? Dark green: yes, agree, brown: neither agree nor disagree, light green: disagree, light blue: don't know (Color figure online)

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