

"Digital Taylorism"? Data Practices and Governance in the Enterprise Software Salesforce

Nyckel, Eva-Maria

Erstveröffentlichung / Primary Publication

Arbeitspapier / working paper

Diese Arbeit wurde durch das Bundesministerium für Bildung und Forschung (BMBF) gefördert (Förderkennzeichen: 16DII111, 16DII112, 16DII113, 16DII114, 16DII115, 16DII116, 16DII117 - "Deutsches Internet-Institut"). / This work has been funded by the Federal Ministry of Education and Research of Germany (BMBF) (grant no.: 16DII111, 16DII112, 16DII113, 16DII114, 16DII115, 16DII116, 16DII117 - "Deutsches Internet-Institut").

Empfohlene Zitierung / Suggested Citation:

Nyckel, E.-M. (2020). "Digital Taylorism"? Data Practices and Governance in the Enterprise Software Salesforce. (Weizenbaum Series, 9). Berlin: Weizenbaum Institute for the Networked Society - The German Internet Institute.
<https://doi.org/10.34669/wi.ws/9>

Nutzungsbedingungen:

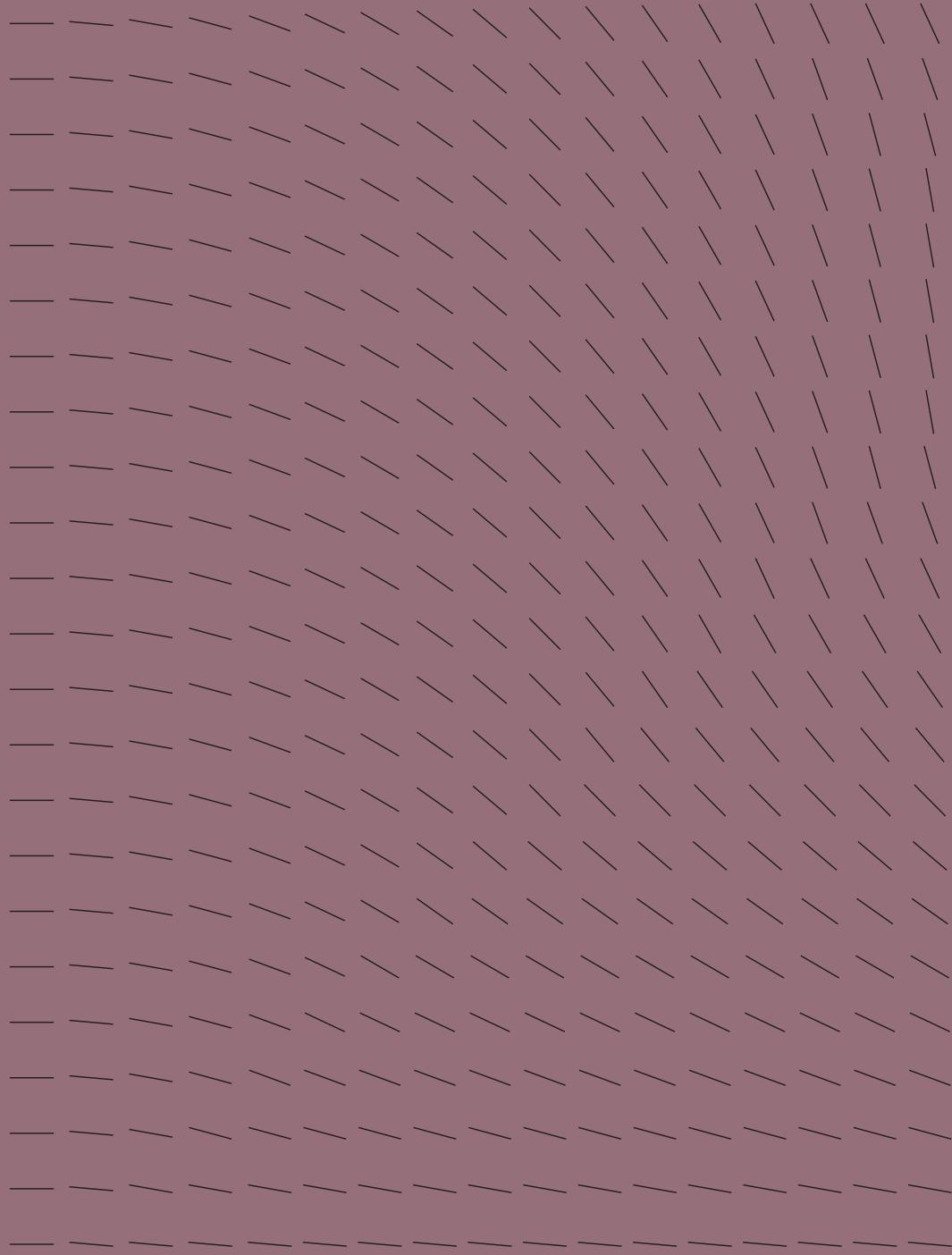
Dieser Text wird unter einer CC BY Lizenz (Namensnennung) zur Verfügung gestellt. Nähere Auskünfte zu den CC-Lizenzen finden Sie hier:

<https://creativecommons.org/licenses/by/4.0/deed.de>

Terms of use:

This document is made available under a CC BY Licence (Attribution). For more Information see:

<https://creativecommons.org/licenses/by/4.0>



Weizenbaum Series #9

Working Paper

**“Digital Taylorism”?
Data Practices and Governance in
the Enterprise Software Salesforce**

Eva-Maria Nyckel

July 2020

Weizenbaum Series

Editors:

The Executive Board of the “Weizenbaum Institute for the Networked Society – The German Internet Institute”

Prof. Dr. Christoph Neuberger

Prof. Dr. Herbert Zech

Prof. Dr. Sascha Friesike

Project Coordination:

Wissenschaftszentrum Berlin für Sozialforschung
Reichpietschufer 50
10785 Berlin

Visiting Address:

Hardenbergstraße 32
10623 Berlin
Email: info@weizenbaum-institut.de
Web: www.weizenbaum-institut.de

Editorial Assistant:

Roland Toth, M.A.

Persistent long-term archiving of this series is ensured by the Social Science Open Access Repository and the DOI registration service in Germany for social science and economic data da|ra.

DOI [10.34669/wi.ws/9](https://doi.org/10.34669/wi.ws/9)

This series is available open access and is licensed under Creative Commons Attribution 4.0 (CC-BY 4.0):

<http://creativecommons.org/licenses/by/4.0/>

This work has been funded by the Federal Ministry of Education and Research of Germany (BMBF) (grant no.: 16DII111, 16DII112, 16DII113, 16DII114, 16DII115, 16DII116, 16DII117 – “Deutsches Internet-Institut”).

Weizenbaum Series #9
Working Paper

“Digital Taylorism”? Data Practices and Governance in the Enterprise Software Salesforce

Eva-Maria Nyckel¹

July 2020

¹ Humboldt-Universität zu Berlin; visiting fellow of the research group „Working in Highly Automated Digital-Hybrid Processes“ at the Weizenbaum Institute (2019).

Abstract

This paper provides an investigation of the economy of the enterprise software Salesforce. The investigation looks at epistemologically distinct practices inscribed in enterprise software and challenges the notion of “digital Taylorism” by looking closer at current as well as historical practices of process management. While Taylor’s systematic approach involved a combination of distributed practices, Salesforce is an enterprise software platform that connects these practices digitally. Rather than examining the role of workers, the paper focuses particularly on the *media techniques* of Taylorism and the *technologies* in contemporary working environments that render organizational structures and courses of action available for algorithmic governance. Thereby, the paper seeks to contribute an additional theorization for organization studies and media theory. The mediated practices are conceptualized in four categories that allow for a contrast of Taylor’s approach with contemporary process management practices. In addition to an analysis of Taylor’s original texts and a document analysis of Salesforce whitepapers, this paper also presents empirical insights. The paper aims to shed light on the relation between techniques involved in Taylorist process management and governing modes of the enterprise software Salesforce.

Keywords

CRM (customer relationship management)

Digital Taylorism

Enterprise Software

ERP (enterprise resource planning)

Labor

Management Control

Platform Economy

Salesforce

Taylorism

1. Introduction

Once a year, the city of San Francisco turns blue. Almost 200,000 people gather in and around Moscone Center and roam the streets of the city to learn more about the company that has recently erected the highest tower in the city, or, as a Taxi driver who drove me to their Headquarters would say, “the highest building on this side of the Mississippi”: the Salesforce Tower. The occasion – a conference, usually taking place on four days in September – goes by the name *Dreamforce*. When I was in San Francisco doing fieldwork in 2017, almost everyone I randomly asked (be it on the bus, on the BART train, or randomly somewhere on the street) knew Salesforce – mostly because of this yearly reoccurring event that practically shuts down the “normal life” in the city. This kind of impact by a company that does not provide any lifestyle product or tech gadgets, but rather enterprise software is somewhat surprising, since this kind of software has gotten to be known as operating in the background, or as Fuller and Goffey (2012) have referred to as “grey media”. Indeed, it is always *media* that we find when we analyze enterprise software such as Salesforce and its structuring effects on the world, as media theorist John D. Peters put it:

The superpositioning of data over commodities, documents over values, and records over events lies at the heart not only of modern capitalism but of media operations in general. Wherever data and world are managed, we find media.
(Peters, 2015: 22)

This paper aims to analyze the *organizational powers* of the “grey media” of organizations, in this case the powers of *enterprise software* managing business processes such as sales processes. To challenge the “dull opacity of devices and techniques not commonly viewed as media” (Fuller and Goffey, 2012: 1), the black box of enterprise software will be opened by an investigation of the system Salesforce and its relation to the Taylorist techniques in the early 20th century.

Today, enterprise software such as Salesforce is used in a large number of organizations to realize the standardization of workflows, the measurement of performance as well as the automation of routine tasks. The organizational power of these software systems is extensive and has been studied in various works (e.g. Conrad, 2017; Mormann, 2016; Pollock and Williams, 2009; Quattrone and Hopper, 2001; Rossiter, 2016; Zuboff, 1988). This paper will focus on the organizational powers of digital media (see also Beverungen et al. 2019), particularly enterprise software, through an analysis of the example Salesforce. The aim is to challenge the term “*digital Taylorism*” which has recently been used to describe the organizational powers of various phenomena from

to quantification practices to the management of microwork and governing modes of call centers. My approach will be to show the continuities but also the discontinuities of Taylor's agenda in relation to the contemporary digital enterprise software Salesforce. Hence, four analytical categories will be presented in order to investigate the relation between Taylorism and Salesforce. In drawing on a media-theoretical perspective (Peters, 2015; Rossiter, 2016; Pias, 2017) and elements of computing history (Haigh, 2003), I will focus on the organizational powers of the digital medium Salesforce.

2. “Digital Taylorism”?

In recent debates about the organizational powers of (digital) media technologies, Taylorism has been conceptualized as having returned, (or never having left) and having an even larger impact on working processes through the new possibilities of media technologies. The following passages show three illustrative empirical examples where a return of Taylorism has been diagnosed. As a first example, it was the technologized management of call centers that evoked the impression of a reiteration of Taylorist methods: Here, written scripts for operators were introduced for governing the labor process. Thus, Phil Taylor and Peter Bain (1999) coined the expression of “an assembly line in the head” when describing the working situation of phone operators (Taylor and Bain, 1999; Taylor et al., 2002):

We describe this as a situation in which the operator has “an assembly-line in the head”, always feeling under pressure and constantly aware that the completion of one task is immediately followed by another. (Taylor and Bain, 1999: 109)

Taylor and Bain's concept has also been taken up in Woodcock's recent book on phone operators, where he talks about a “computerised Taylorism” (Woodcock, 2017: 49f.), facilitating a greater extent of managerial control:

The use of a computer system linked to the phones allows for a significant degree of management control. [...] The labour process in the call centre can therefore be understood as a kind of computerised development of Taylorist management principles. (Woodcock, 2017: 50)

It is not only in service factories like call centers (Taylor and Bain, 1999) but also, as a second example, in microwork-factories like Amazon Mechanical Turk (Irani, 2015; Prassl, 2018) where extensive performance monitoring as well as the medial control

of human labor led to the diagnosis of an intensified return of Taylor's 'scientific management':

Today, Taylorism is back in full swing, resurrected under the guise of the on-demand economy, with technology and algorithms providing a degree of control and oversight of which even Frederick himself could not have dreamed. Instead of entrepreneurial autonomy, the vast majority of on-demand workers labour under strict platform supervision and control. (Prassl, 2018: 52)

As a third example, one of the most significant areas where the concept of "neo-Taylorism" has been introduced, is the discourse around the quantified self, connected to workplace environments. In her work Phoebe V. Moore described quantification practices in the workplace and thereby connected "[n]ew uses of technologies" as "an emerging form of neo-Taylorism which risks subordinating workers' bodies to neoliberal, corporeal capitalism." (Moore, 2018: 211).

However, the hypothesis of a returning Taylorism in digitized working environment has also been contested. In his paper on the relation between Taylorism, the Quantified Self-Movement and the European Science of Work, Christopher O'Neill (2017) took up the notion of "neo-Taylorism", which had been used for describing ubiquitous practices of quantification within organizations, but he proposed that "the contemporary quantification of work owes less to the Taylorist method per se and more to the management theories that sought to alter and transform it." (O'Neill, 2017: 604) Thus, he describes quantification practices, and the respective contexts they are embedded in, as issues of 'soft domination' (O'Neill, 2017: 602). In Moore et al. (2018), Rebecca Lemov conceptualized the "Quantified Total Self" and the corresponding production of subjectivity, thus rather dating back to the Hawthorne Experiments than to Taylorist principles (Lemov, 2018).

A continuity of Taylorist ideas in *digitized* contemporary workplace configurations has been expressed in various recent works through the terms "digital Taylorism" (Brown, Lauder and Ashton, 2011; Head, 2003; Nachtwey and Staab, 2015; Taksa, 2017; Vogt, 2015), "digitally enhanced Taylorism" (Dyer-Witheford, 2015: 137), "computerised Taylorism" (Woodcock, 2017) or "neo-Taylorism" (Moore, 2018). This continuity, however, has also been challenged (O'Neill, 2017; Lemov, 2018). My following analysis sets out to take a closer look at the working situations structured by Salesforce and to challenge the concept of "digital Taylorism", by investigating whether the hypothesis of the even stronger "digital Taylorism" holds, or rather, which (maybe finegrained) deviations and discontinuities can be found.

3. Methodology

The organizational powers of digital media in the context of process management are difficult to analyze due to mostly proprietary and black-boxed algorithms (Pasquale, 2015). The empirical material for the arguments that are developed in this text consists of a body of 11 interviews (conducted in 2017 and 2018), 3 periods of auto-ethnographical 30-day-software testing (trial version) in 2017, 2018 and 2019 (to document changes in the interface and use cases) as well as a document analysis of various white papers and organizational documents created by the company Salesforce and implementation partner organizations. This collection of data as well as the developed arguments and questions are part of a PhD project that is concerned with the question of how the Salesforce algorithms render workflows “programmable” and manageable. The interviews were conducted at different locations such as the Salesforce Headquarter in San Francisco, the Salesforce office in Munich, Germany, at a Salesforce implementation partner agency, as well as with various Salesforce administrators and users in companies situated in Munich and Berlin. In addition to the interviewees at the managerial level, employees in Account Management as well as System Administration were interviewed. Moreover, to get a better idea of how implementations are realized (i.e. mostly adapting, or rather lowering, the initial expectations towards the system and settling for more pragmatic possibilities), employees of implementation partner agencies were consulted for interviews. While this may seem trivial at first glance, it has become a very central issue in the process of gathering material: The significance of Salesforce is based on data. By becoming so prevalent, this also shows the difficulty of studying organization software: Not all Salesforce features can be studied through significant dashboards, visualizations or reports (in my case: screenshots) without enough data sets. The trial version provides only very particular scenarios, while more often than not the trial version ends at the point of “We can’t draw this chart because there is no data.” The screenshot material that I have gotten access to in different companies is not available for publishing due to the necessary protection of data regarding workers and customers, and, of course, trade secrecy. Due to the shortage of data in the trial version I chose to include significant screenshots from publicly available sources to illustrate the use cases and arguments that are presented in this paper.

4. Introducing the case of Salesforce

The Salesforce¹ system structures sales agents' workflows, measures their performance and provides the corresponding data for managerial decisions. Its configuration is specifically designed to optimize sales processes: The declared goal is to acquire more customers, on the one hand, and to tweak the internal processes of the organization, on the other. The software is specialized in managing labor in the service sector, particularly by offering tools for managing the organization's relationship to actual and prospective customers. Ideally, according to Salesforce's advertising claims, sales agents should be primarily occupied with talking to customers while the amount of administrative work should be reduced to a minimum and be partly automatized by Salesforce. The term 'sales force' is neither another Silicon Valley-neologism nor a low-key acronym like SAP (Systems, Applications & Products in Data Processing). It is a term whose meaning has shifted from generally referring to the employees of a sales division to signifying a software system. While SAP coined another acronym – "HANA" (High Performance Analytic Appliance) – for one of its products, it is probably not by accident that the network of Salesforce, including employees and Salesforce customers, is referred to as "Ohana", which is Hawaiian for "family". On a side note, Salesforce founder Marc Benioff claims he has "developed the idea for salesforce.com while swimming with dolphins in Hawaii", during his sabbatical from Oracle (Benioff and Adler, 2009: 18). For some, it may therefore seem as if the neoliberal feel-good-vibes of the silicon valley have marched into the world of enterprise software: In Salesforce's San Francisco Headquarter, the waiting room for visitors is lined with comfortable cushions, most of them featuring the cute face of Astro, the mascot (an illustrated character in a racoon costume), one gets offered a water bottle with a "Salesforce" logo. Thus, as we will see later in the analysis, a contrast can be found in how Salesforce employees are treated to those who work with the enterprise software Salesforce.

While to date there has been little research on Salesforce, there is research in organization studies and media studies on ERP (Enterprise Resource Planning) systems. Such a system can be understood as a central point in an organization where different threads of

¹ For reasons of readability, the term "Salesforce" will be used in this paper in order to refer to the "Salesforce Sales Cloud". The company was registered under the name "Salesforce.com" and offers – under the same domain – various products such as Sales Cloud for Customer Relationship Management or Marketing Cloud. The Sales Cloud is Salesforce's best known, and most popular, service and was the company's first product, for which reason most actors in the field of process management refer to the Sales Cloud as "Salesforce".

information regarding the current and future allocation of resources come together. In a more technical sense, an ERP system is

[...] a packaged software system that allows an organization to share common data across functional areas of the enterprise and produce and access information in a real-time environment. (Locke and Lowe, 2007: 794)

The study of the organizational powers of ERP systems has mostly been conducted through looking at the organizational configurations, structures and processes before and after the implementation of such systems. It has been claimed that ERP systems embody best practices that are transferred as part of the package's "techno-logic" (Dechow and Mouritsen, 2005) to the organization that adopts the system (Locke and Lowe, 2007: 794).² Whereas organizational powers of digital media have mostly been studied through implementation cases in organizational theory and adjacent fields, it is this formative techno-logic of the system that media theory is interested in (see Peters, 2015: 87ff.). From a media-theoretical perspective, Rossiter argues for the importance of investigating the "economy" of ERP systems in a way that diverges from purely ethnographic approaches:

A study of the economy of ERP systems [...] is more interested in how the technical parameters of software determine organizational practices and financial transactions within a logistical paradigm. While not exclusive of issues around implementation, the term economy marks a difference of method from ethnographic approaches, which analyze the implementation of ERP systems in institutions from the perspective of users and stakeholders. (Rossiter, 2016: 120)

In media theory, questions of economy and labor have not been a central topic for a long time. With the ongoing digitalization and algorithmization of economic practices, media theorists have shown a growing interest in questions of labor and enterprise software (Conrad, 2017; Hoof, 2015; Rossiter, 2016; Dommann, 2017). To conceptualize enterprise software, Rossiter uses a term that was originally coined by John D. Peters (2015): "logistical media". The job of logistical media is – in Peters' words – "to organize and orient, to arrange people and property, often into grids" (Peters 2015: 37). Rossiter further identified "calculations of movement, productivity, efficiency, performance" as the organizational powers, respectively as the "regimes that govern logistical labor and life as they intersect with the software and infrastructure that comprise logistical media." (Rossiter, 2016: 6).

2 There have been several discussions whether the fitting process of ERP systems is one where the software is fitted to the organization, the organization is fitted to the software (Conrad, 2017; Da-venport, 1998; Kallinikos, 2011; Locke and Lowe, 2007; Rossiter, 2016) or, whether it is a "mutual shaping" of technology and organizations (Pollock and Williams, 2009).

Since 1999, Salesforce has been offered as a cloud-based service, displacing traditional “on premise” enterprise software such as SAP. Salesforce clients (i.e. organizations having implemented and using Salesforce) pay a monthly subscription fee and can access the service from a web browser. When it comes to Salesforce, we are not presented with a “packaged system” as described before for ERP systems (cf. Locke and Lowe, 2007), but with a cloud software what makes a large difference in the scope of materiality, standardization and accessibility. Salesforce co-founder Narinder Singh described the company as “a next-generation IBM without the baggage of hardware” (Benioff and Adler, 2009: 110).³ In their work on the success story of SAP, Neil Pollock and Robin Williams mention Salesforce.com as an SAP competitor with a different service model that “does not require customers to install and operate its software” and which “catalysed a dramatic change in the model for delivering/licensing CRM applications” (Pollock and Williams, 2009: 50). The underlying idea was to introduce Software as a Service (SaaS) for managing processes (in CRM as well as in ERP), which has been referred to as operating “SAP by the hour” (Pollock and Williams, 2009: 50). The subscription-based business model allows for comparably low entry costs and therefore allows smaller companies to implement Salesforce enterprise software (Pollock and Williams, 2009: 50). In technical terms, Salesforce is a “multitenant platform” that hosts a number of tenants, i.e. organizations, per instance. Every organization that implements Salesforce is attributed a number, an “org number” through which it is identifiable in the database.⁴

[T]he secret is the Org-ID. That's, that is literally the defining line between every single organization, every single object, everything in the system is key to offer the Org-ID. It's a very simple thing, I mean, if you're a database person you'll think about it as “Is it really that simple?” – It is really that simple. Um, I mean, there are certain other things they do that are stupidly complex. But the Org-IDs, it's a database column, right, that's what it is. But it is the key to the multitenant architecture [...]⁵

³ The reference to “next-generation-IBM” is particularly striking given that SAP emerged from a of collaboration of 5 former IBM employees.

⁴ The Salesforce employees use the Salesforce software as well. Salesforce has been assigned the “Org Number” 62, see I#2 March 26, 2017.

⁵ I#2 00:40:52-7#, March 26, 2017.

Not being a “canned software” (and thus, not having to be implemented by an armada of consultants), but rather a highly standardized and modularized platform, often leads to the adoption of default settings and values:

In the case of enterprise software, the tendency is for organizations to accept the supplier’s template in order to minimize immediate costs associated with implementation and future costs resulting from ongoing maintenance. (Rossiter, 2016: 124)

SAP realized the potential to apply the algorithmic logic of business process management to different contexts at a very early stage.⁶ SAP software is now used in the administrations of diverse institutional settings, such as enterprises, government agencies, universities, churches as well as hospitals (Mormann, 2016: 14ff.; Rossiter, 2016: 119). Similarly, with the use of Salesforce in universities and hospitals, the students or patients are processed according to the business logic of how customers are treated in enterprises.

[O]bscure is the extent to which enterprise resource planning (ERP), customer relationship management (CRM), and supply chain management (SCM) systems for managing administrative and financial tasks have penetrated a diverse range of institutional settings and industry sectors. (Rossiter, 2016: 119)

Taking a closer look at the business logic that Salesforce provides, it becomes visible that the software is configured to not only track the interactions of actual customers, but also those of potential customers, allowing the optimization of what is referred to as the ‘sales funnel’. Based on different modes of data collection, people can be classified and digitally represented as potential customers, or *Leads* (i.e. as data objects denoted as ‘Leads’)⁷, in the digital system. Those *Leads* are supposed to be converted into Sales *Opportunities* through interactions with convincing sales agents and the *Opportunities* will, in the best-case scenario, be turned into closed *Opportunities*, i.e. into successful transactions that result in new customers. During a successful *Lead* qualification process, a *Lead* object is converted into three new objects by default: *Account*, *Contact* and *Opportunity*. *Account* contains the data set of an organization/enterprise to which something should be sold, *Contact* is the data set of the contact person within the mentioned *Account*, and an *Opportunity* object is created for the concrete sales option.

6 For the diverse implementation potential of enterprise software, see also Haigh, 2003.

7 The names for the “Salesforce Objects” (such as *Lead*, *Opportunity*, *Account*) as they are also technically represented, are formatted in italics. Salesforce Objects are basically database tables that allow for storing data specific to organizations and can be handled.

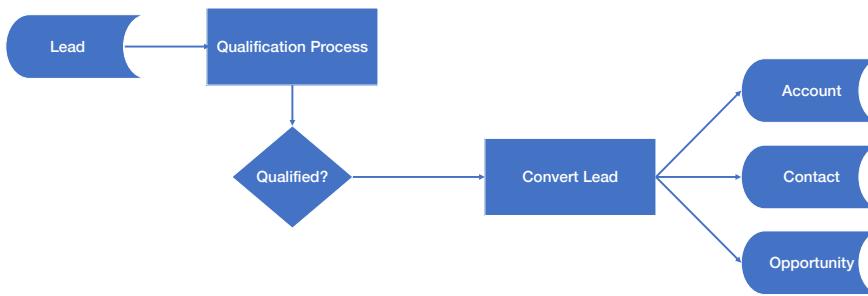


Figure 1. Lead Conversion Process in Salesforce.

At this point, the complex intermingling of information technology and business becomes visible: The operational processes of an organization are not only mapped and represented in the technical system, but rather controlled and produced through the software.⁸ In order to further elaborate on the organizational powers of the enterprise software Salesforce, four particular aspects of process management will be highlighted. These four aspects will serve to challenge or potentially emphasize the concept of “digital Taylorism”. The criteria are not meant to provide an exhaustive account⁹ of scientific management, but were chosen due to their significance and suitability for analyzing and contrasting historical and current process management, in this case Salesforce.

4.1. Separation of Planning and Performing: Division of Labor

Looking at current advertisements for process management systems or listening to managerial claims these days, it seems as if it does not matter whether we talk about Taylorism or Salesforce; some basic narratives have stayed the same: The central idea is still to avoid “larger wastes of human effort” (Taylor, 1911: 5). When Frederick W. Taylor published *The Principles of Scientific Management* in 1911, his stated goal was to optimize work processes so that they would consume as little time as possible. Taylor’s principles held that inefficiencies should be made visible since the problem with

8 This first conclusion regarding the system Salesforce builds basically on what Galloway conceptualized for protocols and their power relations, applied for the level of the concrete system Salesforce. Galloway defines “protocol” as “a language that regulates flow, directs netspace, codes relationships, and connects life-forms. Protocol does not produce or causally effect objects, but rather is a structuring agent that appears as the result of a set of object dispositions. Protocol is the reason that the Internet works and performs work.” (Galloway, 2004: 74f.) The analysis is somehow ideal typical for how Salesforce could and should be analyzed.

9 In the order of appearance, these categories for analysis can be understood as the inherent chronological process of the application of Taylorist methods. What is missing in this analysis (amongst other things), are bonus payments that were introduced by Taylor.

inefficiency is that “[a]wkward, inefficient, or ill-directed movements of men, however, leave nothing visible or tangible behind them” (Taylor, 1911: 5). The Taylorist methodology was designed to make these inefficiencies visible in manual work processes, i.e. physical work. One central aspect of Taylor’s principles was the functional division of labor – and therefore the separation of the planning from the performing of work (Taylor, 1911: 26). With the principles of scientific management, the management of labor was literally taken to a new level, away from the shop floor. Responsibility for workflows was transferred from the workers to the planning department, where decisions were made about how work was to be done. As the efficient use of time was a critical factor for Taylor, dead time in working processes should be eliminated.¹⁰

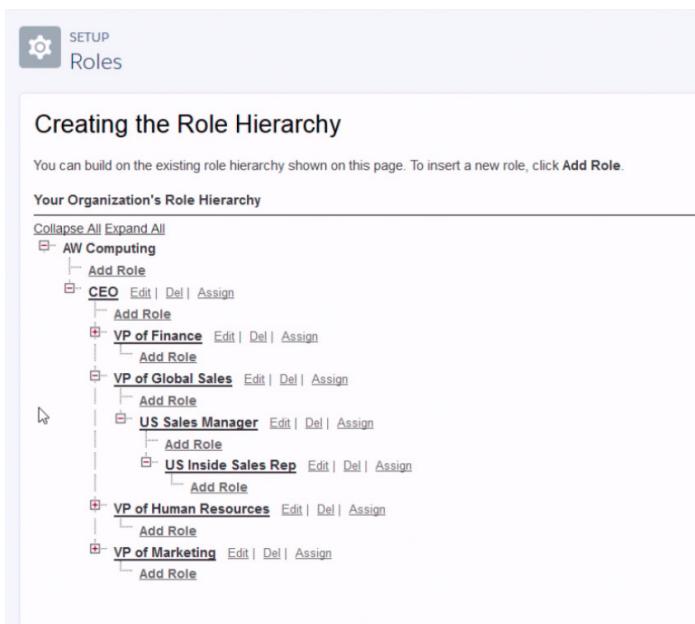


Figure 2. Role Hierarchy.

Digital process management systems have been considered to be an escalated version of Taylorist techniques – augmented with digital technology and applied to a much wider range of employees, i.e. not just to industrial workers, but also to service workers such as sales agents, knowledge workers and managers themselves (Head, 2003; Economist, 2015). One central idea of scientific management was separating the preparatory planning from the performance of work – separating a describing scheme from its execution. When Salesforce is used, the planning department of operational processes is considerably expanded, reaching beyond the boundaries of a single organization. It is not only the internal planning department of an organization that defines what is

10 See also Gregg (2017) and Hoof (2015).

to be done, but also the media-technological conditions, as the software's algorithms also play a part in defining what can and what cannot be done by the workers, as Rossiter concluded for enterprise software: “[E]ngineers design the defaults of software that then decide how organizations will operate” (Rossiter, 2016: 125). Therefore, the Salesforce product managers and software engineers, defining structures and default values, can be considered to be additional actors performing at the level of the former planning bureaus. Some of the functions, such as governing and regulating workers regarding how to do their work, are even taken over by the Salesforce interface. The Salesforce user's possible interactions, be it a manager or a sales agent, are determined by the preceding plans and ideas of the Salesforce product managers and software engineers, which were translated into matters of software, lying underneath the interface. Furthermore, the labor-dividing structure of an organization can be translated into matters of software that then determines what users can or cannot see on the interface. The hierarchy of an organization can be directly implemented into what is called the Salesforce role hierarchy: The Salesforce administrator (i.e. the person with administrator rights for an implementation) can allocate specific roles to each user, corresponding to her or his role in the organization. Thus, user roles govern how the interface looks for each user, i.e. which areas are visible, and delimit the respective reading and writing permissions. The question of labor division has now – with Salesforce – become the question of “which algorithmic role was allocated to whom” in the Salesforce system.

4.2. Laboratory Setting: Finding the best way vs. even better ways

Taylor assumed that there was “one best way” – *the* most efficient way – of doing work, which could be determined exclusively through scientific methods and empirical experiments. The goal was to substitute the workers’ individual judgement with what in his words was a ‘science’ of work:

The development of a science [...] involves the establishment of many rules, laws, and formulae which replace the judgment of the individual workman and which can be effectively used only after having been systematically recorded, indexed, etc. (Taylor, 1911: 37ff.)

The “rules, laws and formulae” were deduced from experiments that played a crucial part in Taylor’s principles. Measurement was regarded as a “weapon” against inefficiency (Merkle, 1980: 84). The recording and indexing – both of which require medial registering – of laborers’ performance was necessary to gather data for a systematic analysis. Taylor gives quite an elaborate account of his idea of such experiments: The

goal was to find out what should be done *ideally*, which would set a new *standard*. Therefore, the labor performance of 10-15 particularly skilled workers was captured, the registering was performed by the so-called “time-study men” who were equipped with very basic media, i.e. “a stopwatch and a properly ruled notebook” (Taylor, 1911: 117). In order to conduct time studies, closed laboratory-like situations had to be created. The approach used in these studies was to “disassemble larger movements punctiliously into smaller ones, analyzing the time needed so as to decrease it” (Krajewski, 2011: 123). After the work processes were analyzed, the results were used to construct ideal work processes with predefined goals that were to be reached by the workers.

A great deal of the ‘science’ of scientific management consisted of systematically inquiring into and publicizing the methods and implements that had already been devised haphazardly throughout a given trade, with the intention of discovering the “best” ones. (Merkle, 1980: 84)

Besides questioning the (pseudo-)scientific character of Taylor’s system, it is noteworthy that, although Taylor often used the term ‘scientific’ when he referred to his management principles, it was not he who named these principles ‘scientific management’, but lawyer Louis D. Brandeis (Merkle, 1980: 59; Mormann, 2016: 120; Shenhav and Weitz, 2000: 383). The term ‘scientific management’ was only later adopted by Taylor. His core concept for ‘scientifically’ determining the “best way” of doing a particular task was basically extensive data collection (or what extensive data collection meant at that time), i.e. quantification, which resulted in an ideal way of how work was to be done. One could also say that this was a practice of setting standards for particular elementary tasks.

However, the potential capturing capacity of digital technology allows time studies about work to be carried to a new level: With digital process management systems like Salesforce, the world itself is potentially becoming the laboratory. “Everything” can be quantified and algorithmically processed – *in situ* and in real time –, which is the hope of both the Salesforce developers as well as the decision-makers in organizations that choose Salesforce as a measuring instrument. While Taylor wanted to deduce “*one best way*” from his studies in order to create a future reference point for workers, Salesforce allows for constant data collection and the continuous tweaking of setups. The algorithmic laboratory environment encompasses a paradigmatic change – the quest is not to look for “*one best way*” but constantly for “*even better ways*”: Salesforce unleashes the potential of ongoing optimization. Work is not studied in a closed laboratory over a limited period of time, but the laboratory finds its way into the everyday worklife.

The guided trial software tours (one can choose out of four) come in different themes and invoke ideas of efficiency engineering with slogans like “Close More Deals” or “Sell Smarter”. While Taylor determined the desired values through observing 10-15 highly skilled workers, the Salesforce software plays a big role in defining the goals to be reached. Salesforce allows for data collection on a large scale – even across different organizations – so extensive, that a former system administrator at Salesforce expressed his frustration over the sometimes undervalued potential:

I think the power of Salesforce is [...] the integration of the data, and having the data all in one place [...] they've got all of this data, their customer data, their business process data and it's so flexible and searchable. I mean, there is just so much power in all of that data being in one place, being manipulated together, um, you know, and it's also bad, because most organizations just aren't advanced enough to properly utilize of that, right.¹¹

The following screenshots (Fig. 3 and Fig. 4) show illustrative examples for the setup of efficiency-tweaking. The first image presents the detail view of a potential sale – an *opportunity*. Looking at the properties of an opportunity, the value of *probability* (stated as a percentage) represents the likelihood that this opportunity will close, i.e. that a sale will happen.¹² Through this value, Salesforce shows the calculated probability of a potential customer closing a deal based on various parameters in the system, and the sales agents are urged to influence and increase this probability.¹³ The Forecast View (Fig. 4) presents anticipated scenarios regarding the potential revenue of closed opportunities.

Based on the probabilities of the opportunities to be closed, there are different scenarios such as the “Best Case Forecast”, including the highest potential amounts from opportunities.

11 I#3 #00:30:57-2#, March 26, 2017

12 The Salesforce Documentation provides information on the software, data objects, fields and properties. The probability value is described as follows: “Likelihood that opportunity will close, stated as a percentage. The Probability value is always updated by a change in the Stage value, even if Probability is marked as read only on your page layout. Users with access to edit this field can override the value.” https://help.salesforce.com/articleView?id=opp_fields.htm&type=5

13 Inbound marketing and customer relationship management mark a new paradigm of process management – algorithmic anticipatory logic is now used in order to optimize sales calls before they even happen: A lot of knowledge from marketing divisions flows into the sales agent’s situation. And a lot more of this can be expected, since Salesforce recently teamed up with IBM in order to enhance their Customer Relationship Management with artificial intelligence (IBM News releases, 2017).

Figure 3. Opportunity Detail View in Salesforce.

Months	Closed Only	Commit Forecast	Best Case Forecast	Open Pipeline
Total: 6 Months	59.000,00 €	170.500,00 €	170.500,00 €	475.500,00 €
February FY 2019	19.000,00 €	58.500,00 €	58.500,00 €	251.000,00 €
March FY 2019	40.000,00 €	62.500,00 €	62.500,00 €	152.500,00 €
April FY 2019	0,00 €	39.500,00 €	39.500,00 €	62.000,00 €
May FY 2019	0,00 €	10.000,00 €	10.000,00 €	10.000,00 €
June FY 2019	0,00 €	0,00 €	0,00 €	0,00 €
July FY 2019	0,00 €	0,00 €	0,00 €	0,00 €

Figure 4. Forecast View in Salesforce.

In the concrete example of Salesforce, reports, diagrams and forecasts create a form of organizational “truth”: Numbers are algorithmically crunched in real-time in order to provide forecasts regarding the closing of deals and – linked to that – possible future revenues. Along with the assumption of potential ubiquitous quantification comes the problem that captured quantities are often mistaken for qualitative statements, and correlations are treated as causalities. The contemporary enthusiasm for data collection and evaluation, as well as the underlying hope of finding “truth” in the data (Zuboff, 1988: 349), might lead to a new “Empiricism” as it was discussed by Gernot Rieder and Judith Simon (2017: 86ff.). Shoshana Zuboff concluded that enterprise software – in relation to Taylorism – is creating the “fantasy of a world that is not only transparent but also shorn of the conflict associated with subjective opinion – [...] the system will eliminate disagreement about ‘what is’” (Zuboff, 1988: 315ff.).

Ubiquitous quantification leads to a new role for middle management though: From a sociological perspective, managers are displaced from their former roles when their

decisions really only amount to following the numbers provided by the enterprise software. As it was pointed out in a 2015 Economist column: "In Taylor's world, managers were the lords of creation. In the digital world they are mere widgets in the giant corporate computer" (Economist, 2015). In theory, the now seemingly mechanical character of managerial work could mean its potential displacement and the automation of managerial work, since decision-making processes based on numbers could easily be executed by algorithms, or, as Rossiter put it: "Who really needs a manager when decisions become computational calculations?" (Rossiter, 2016: 125)¹⁴

However, in current practices, the use of process management software does not mean a simple elimination of managerial positions, it rather highlights a shift of responsibilities. In the light of ubiquitous quantification, sales managers are now urged to become efficiency engineers and to constantly discover not "the best" but "even better ways". Salesforce provides them with tools (such as the forecast tool) so that managers can tinker with different setups of performance indicators. This tinkering is based on collecting and correlating data from both system-internal and external activities.¹⁵

4.3. Control: Governing Labor

In order to make sure that the workers followed the previously determined "best way" of doing a particular work, a new form of governing work processes was introduced in scientific management: Control was realized through material inscriptions. First, the knowledge about work procedures was extracted from the personally conveyed rules of thumb. With "rules of thumb", Taylor signified the knowledge that had previously been conveyed from person to person about labor processes which were – according to his opinion – imprecise and inefficient (Taylor, 1911: 16, 24ff., 31ff., 100ff.). In a second step, this knowledge was concentrated in the hands of the planning department, which was responsible for planning the steps in which the workers' tasks were to be performed. To achieve standardized control of the ideal work procedures, the information was transferred to a medial form: *instruction cards*. Instruction cards were used to communicate the accumulated knowledge of how the single steps were to be carried out in a standardized manner, as mechanically as possible, without any detours. Each

¹⁴ While this quote alludes to a potential danger to managerial positions, this development can be contested with historian Thomas Haigh – who emphasized that Taylor was trying to impose technocratic control over management all along (Haigh, 2001; Haigh, 2003). Hannah Mormann also marked the concept of Taylorism as an example of how problem descriptions from technical areas have been transferred to social contexts in an engineer-like manner (Mormann, 2016: 119ff.).

¹⁵ See I#3, March 27, 2017.

movement was determined, the time for each movement predefined. How these instructions came to be, was invisible to the workers.

[I]t is recognizable in Taylor's studies that even the best workers will never have any understanding of the science behind what they are doing. As an illiterate user, the worker has at his disposal only those options that the already-compiled program has prepared for him, and he is neither competent enough nor authorized to read the source code that dictates his behavior. (Pias, 2017: 33)

Here, Claus Pias does not refer to a compiled computer program, but exactly to the instruction cards in question and thus emphasizes the opaqueness of the Taylorist system. For the workers, Salesforce also acts as a black box to a large extent because of the inscribed power relations and the inherent inaccessibility of cloud software and its core code. When it comes to conveying knowledge about work, Frank B. Gilbreth emphasized the Taylorist system's indifference towards the medial or material form (Gilbreth, 1912: 17ff.). In fact, some functions that Salesforce is providing can arguably be considered as an updated digital version of the *instruction card*. Looking now at the contemporary working environments in the service sector, and specifically at the tasks done by sales agents, the Salesforce software heavily controls how work processes are structured.¹⁶ The channel for accumulating all relevant knowledge about work processes and communicating it to the workers is the Salesforce software. The Salesforce Tasks Screen (Fig. 5) resembles a dynamic version of Taylor's instruction cards: Tasks that are associated with one's own account can be created by oneself, automatically by Salesforce or by other colleagues or supervisors who have the necessary system permissions.

Regarding the control of how labor is to be done, a "mediatization" takes place in both cases – on Taylor's industrial shop floor as well as in digitally managed office environments.¹⁷ The power to govern the work processes moves from the functional foreman

¹⁶ Irani's (2015) research on Amazon Mechanical Turk is a good example of the machine-like manner in which workers are required to do their work, embedded in algorithmically controlled environments. The governing medium, in this case, coincides with the working equipment.

¹⁷ As Bowker and Leigh Star pointed out, the effect of dissecting tasks in order to potentially register performance, holds also true for the area of nursing practices and a use case where the NIC (Nursing Intervention Classification) should be implemented: "Like any other classification scheme that renders work visible, it can also render surveillance easier – and it could in the end lead to a Tayloristic dissection of the tasks of nursing (as the NIC designers are well aware). So-called unskilled tasks may be taken out of their hands and the profession as a whole may suffer a loss of autonomy and the substitution of rigid procedure for common sense." (Bowker and Leigh Star, 2000: 30).

to the instruction cards, from managers to algorithms, a phenomenon that Aneesh Aneesh identified, in the latter case, as "algocracy":

Algocratic governance [...] automatically determines the range of possible action. In terms of operational code, bureaucracy operates by the permissibility or nonpermissibility of action according to written rules.

While there may be ambiguity about the permissibility of a certain course of action, the ambiguity is usually solved by either making the rules clearer, more specific, or by incorporating the ambiguous as a version of the already defined (Aneesh, 2009: 356). Work routines of sales agents can be governed through software by the prescription of potential options at the software interface. However, new forms of control always also bring forth new forms of subversion that can be empirically followed. Such subversive techniques have been brought up in various interviews. Thus, workers have developed new ways of tricking the system. A central example is for example the entering of dummy entries (random text) in order to proceed to a next screen (Raffetseder, Schaupp, Staab, 2017: 235ff.).

My Tasks					
Date	Status	Subject	Name	Related To	Account
X	Open	Call Marc to schedule demo (Sample)	Marc Benioff (Sample)		salesforce.com (Sample)
X	Open	Try to call Jim on Thurs (Sample)	John Steele (Sample), BigLife Inc.		
X	Open	Call Maria tomorrow (Sample)	Maria Gardner (Sample), 3C Systems		
X	Open	Delete Sample Accounts to delete sample contacts, opportunities, tasks, and events			
X	Open	Email Carole to propose an agenda (Sample)	Carole White (Sample)	Global Media - 270 Widgets (Sample)	Global Media (Sample)
X 1/26/2017	Open	Call Geoff to discuss feedback (Sample)	Geoff Minor (Sample)	Global Media - 270 Widgets (Sample)	Global Media (Sample)
X 1/27/2017	Open	Sync with Leanne about conference attendance (Sample)	Leanne Tomlin (Sample)	Acme (Sample)	Acme (Sample)
X 1/30/2017	Open	Discuss partnership opportunities (Sample)	Marc Benioff (Sample)	salesforce.com (Sample)	salesforce.com (Sample)
X 2/15/2017	Open	Follow up with Howard (Sample)	Howard Jones (Sample)	Acme (Sample)	Acme (Sample)
X 2/16/2017	Open	Review Pricing Proposal (sample)	Carole White (Sample)		Global Media (Sample)
X 2/17/2017	Open	Call Jon for feedback (sample)	Jon Amos (Sample)		Global Media (Sample)
X 2/17/2017	Open	Send latest whitepaper (Sample)	Geoff Minor (Sample)		Global Media (Sample)
X 2/18/2017	Open	Demo Platform Widgets (Sample)	Amy Jordan (Sample), Lee Enterprise, Inc.		
X 2/21/2017	Open	Debrief (Sample)		Acme - 1,200 Widgets (Sample)	Acme (Sample)
X 2/24/2017	Open	Discussion (Sample)	David Adelson (Sample), Green Dot Publishing		
X 2/25/2017	Open	Sync Up (Sample)	Sarah Loehr (Sample), MedLife, Inc.		
X 2/26/2017	Open	Follow Up with Howard on timing (Sample)	Howard Jones (Sample)	Acme - 1,200 Widgets (Sample)	Acme (Sample)
X 2/27/2017	Open	Review (Sample)	Andy Smith (Sample), Universal Technologies		
X 3/1/2017	Open	Planning for RFP (Sample)		Acme - 1,200 Widgets (Sample)	Acme (Sample)
X 3/3/2017	Open	Discuss latest marketing whitepaper (Sample)	Leanne Tomlin (Sample)	Acme (Sample)	Acme (Sample)

Figure 5. Task List in Salesforce

4.4. Monitoring: Assessing Labor Performance

To minimize potential detours and inefficiencies in the labor process, Taylor installed a surveillance, or in Philip E. Agre's terms, rather a *capturing* regime (Agre, 1994). The standardization of work processes was accompanied by a standardization of the procedures that governed how organizational information was collected: Performed work was to be processed in the form of numbers and metrics (Heintz, 1993: 163). The registration apparatus for evaluating workers' performance consisted of standardized forms, stopwatches and human work inspectors. The inspectors filled out the forms and combined their observations with stopwatch measurements in order to re-assess whether the workers had reached pre-defined goals. If the workers were not supposed to know that or how they were supervised, special watches were used, built into leather-covered books. This monitoring was intended to ensure that inefficient work processes were caught and could be optimized. Regarding the monitoring of the workers' performance, Salesforce could be basically perceived as an incarnation of Taylor's dreams. In Salesforce, labor performance is measured on the basis of different indicators that are displayed on the software interface in the form of visual diagrams and tables. The diagram "Sales Activity by Sales Rep" (Fig. 7), which is also in the top right corner of Fig. 6, displays the type as well as the quantity of activities and occupations of each sales agent. The visualization is based on the number of corresponding data sets that were created or modified. This way, managers can check "at a glance" (see Hoof, 2015) – and in real-time – whether sales agents spend most of their work time on calls.

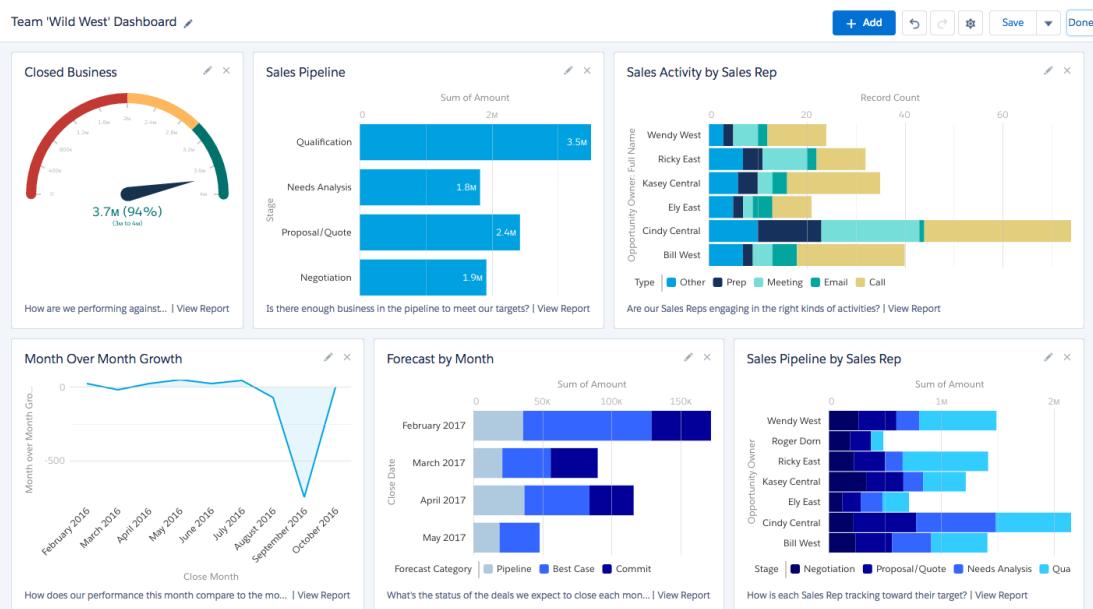


Figure 6. Dashboard in Salesforce.

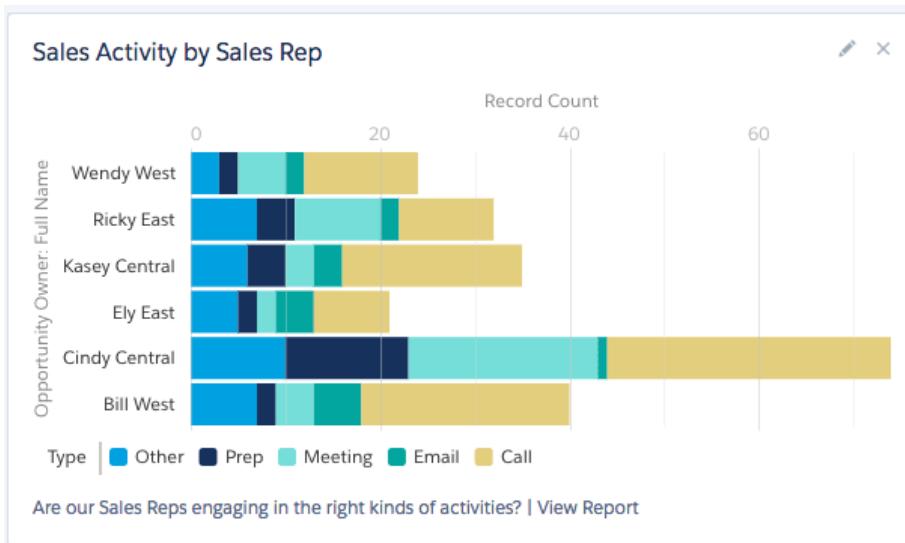


Figure 7. Detail view of dashboard element in Salesforce.

Taylor's monitoring and control principles were directed towards the work force within the organization, particularly on the shop floor. With the implementation of Salesforce, not only are workers under surveillance, but also customers – even before they become customers.¹⁸ Potential customers are, in a way, produced by the technical system as “Leads” through various modes of data collection. In a harmless scenario, all actors who used and submitted a request through the company's website contact form would be recorded as Leads in Salesforce. Salesforce implements the tasks of the registering apparatus, doing the formerly apperceptive labor of capturing a worker's performance. The platform automatically evaluates this performance data, which affects the digital equivalent of instruction cards – the tasks list. The labor of the work inspector in scientific management, registering the performance of workers, has moved to the software, which automatically registers clicks.¹⁹

When contemporary practices of process management are analyzed with regard to the Taylorist approach, after all parallels and continuities, it is central to also focus on the

¹⁸ Interactions with the organization (such as submitted contact forms, phone calls, e-mails, but also website visits) of prospective customers are captured and their probable future behavior is algorithmically calculated. Salesforce's tools help to get “[d]eep insight into your lead's intent”. See for example <https://www.saleswingsapp.com/lead-scoring-integration-for-salesforce/>.

¹⁹ If there is a need to control not only the workers' fingers, using the computer's peripheral devices to interact with the software interface, but also to take control of their body in a Taylorist manner, various sensor solutions like FitBit easily allow for the tracking of bodily functions such as heart rate or movement. To name one example here, the oil company BP recently launched a health program, rewarding fitness activities with various vouchers. The Salesforce platform allows for the easy integration of externally generated data via APIs (Application Programming Interfaces), e.g. by the FitBit. This becomes notably relevant with Salesforce's response to the Covid-19-crisis where the enterprise software vendor seeks to include even more bodily parameters: „In addition to the self-reported temperatures during daily wellness check-ins, Salesforce has installed kiosks where employees can take their temperature at the office. Our goal is to make these easy to use and accessible for all employees.“ (Pinkham, 2020).

kind of labor that is sought to be algorithmically controlled or automated. Taylor was mainly interested in the control of physical labor within the context of metal processing. It was William H. Leffingwell who transferred the methods of scientific management to office work and established the practice of “*Scientific Office Management*” (Haigh, 2003: 60ff.; Head, 2003: 60ff; Leffingwell: 1917). In 1992 management theorist Peter F. Drucker contested that knowledge work could be properly measured with Taylorist devices. Moore offers a contemporary perspective – and concludes, that it is exactly “part of managerial efforts to control and extract value from creative as well as physical labour” which results in “quantifying workers of all trades and work of all calibres” (Moore, 2018: 179). Moore further argues that it is the practice of quantification moving to formerly unseen labor – facilitated by digital systems and corresponding sensor technology – which makes a difference between Taylorism and today:

Whereas traditional Taylorism targets external performance within enclosed factories, quantifying work [...] allows for the intensification of control of micro-social and the inner processes of unseen labour in open-ended working environments. (Moore, 2018: 179)

This difference, or discontinuity, is also present in the monitoring practices through Salesforce. Events are automatically registered, but another difference is the potential accessibility of data for Salesforce users (which is, again, regulated by the digitally implemented role hierarchy). The inaccessibility of the data to the workers was essential for establishing the factory hierarchy in scientific management. Salesforce, as a digital system, allows for a new form of self-assessment (see Bröckling, 2007). Numerical information regarding self-performance is no longer hidden from the workers, but rather re-enacted at the dashboard interface of those systems, where every user has access to his/her data and is encouraged to compete with colleagues.²⁰ The visualization of potential inefficiencies through capturing means that workers’ understanding of themselves – as working selves – is crucially influenced or even constituted by the numbers that are tracked and written down by the software system. While in scientific management, the workers were not directly and constantly involved in the feedback loop of optimization, process management systems automatically register and display performance data, leading to a new form of *self-regulation* that connects to other dis-

²⁰ In the German discourse around the quantified self, Ulrich Bröckling distinguished the image of the rational Taylorist manager from the “entrepreneurial” personality, where the latter has, according to his analysis, become ubiquitous (Bröckling, 2007). Furthermore, Bröckling conceptualized the 360-degree feedback system as a panoptic technology (Bröckling, 2007, p. 236ff.).

courses around the quantified self-movement and self-optimization. When an Account Executive was asked about the importance of the dashboard, he responded:

Yeah, I mean, it's a hundred per cent important to me. The way that I look at it is, if you don't track it, it's hard to gain value out of it later. What's the purpose of a dashboard, that might be a question. And I'd argue that the purpose is to gain insight into trends that are happening in business, so that you can make strategic decisions. [...] So there are some pretty basic things that we track – We track our activities, including phone calls, ahm, meetings, whatever, and ahm, you know, pipelines, so, how much potential business we generated [...].²¹

The dashboard offers a scenario where "*you're* watching you at work" (Lemov, 2018: 192). This mindset and technological setup of potential self-improvement also resembles what Melissa Gregg (2017) titled "athleticism at the workplace". In Lemov's words, the potential engagement with one's own data through dashboard interfaces means that "the subjective 'self' is engaged through environmental feedback mechanisms and, in the process, potentially transformed." (Lemov, 2018: 183) Moore also frames the monitoring of contemporary workplaces as a difference to Taylorism in the way 'that the worker may actually be able to see the data that is being accumulated about themselves (Moore, 2018: 178) She also accentuates the potential of reversing this dynamic and using the data for making a case against their employers, e.g. by using data to prove sleep deprivation due to work overload (see Moore, 2018: 178).

5. Summary and Closing Remarks

The analysis of Salesforce along four criteria disclosed a lot of continuities in relation to Taylorist ideas. In terms of what Taylor wanted, there were many goals that can also be found in today's organizational practices that are enhanced with digital media, respectively governed by the enterprise software Salesforce. Lucy Taksa has described this continuity of Taylor's goals through framing scientific management as a hegemonic ideology:

While Taylor's all-encompassing aims were not accomplished exactly in accordance with his aspirations, nevertheless, I suggest that SM [scientific management] has operated as a hegemonic ideology, which is still influencing organizational cultures today through a range of different management strategies. (Taksa, 2017: 5)

21 I#1 #00:09:13-9# March 24, 2017.

Whereas techniques of scientific management consisted of distributed practices, digital enterprise software connects the practices of labor division, assessing ideal ways of working, governing labor processes and monitoring, in one platform. The management of data and world is the central task of enterprise software in organizations: Data about revenue streams, resources and labor performance is permanently collected in order to prestructure and automate organizational workflows and decisions. Thus, the most important organizing power of enterprise software like Salesforce probably lies in its potential centralization of all kinds of *digital* flows of information: Salesforce digitally connects the data flows of process models, instructions, predictions and performance data in one system – or more precisely on one platform. This allows for dynamic and continuous “real-time” feedback to the workers/users. Everything is in one place: calendar, e-mails, notes, supposedly even the interaction between employees: With Chatter, Salesforce provides a system of communication for employees that offers very similar features like Facebook. To put it exaggeratedly: There is no outside of Salesforce anymore, when all the operations of an organization can be displayed, controlled and monitored through this one system.

The most significant discontinuity regarding Taylorist practices has been found in the second criterion, i.e. Laboratory setting: In this case, the possibilities of the digital systems could signify a paradigmatic change not only in quantitative capturing in a Taylorist manner, but as a qualitative change in subjectivation, particularly for those who are urged to tweak the “laboratory” setups towards higher efficiency.

Taking a step back to evaluate the term “digital Taylorism”, from a media-theoretical perspective, I want to emphasize the “digital” part. Following Rossiter, the use of *digital* media does make a significant difference in contrast to the non-digital, and requires the study of “[...] the programming of measure, calculation, and decision that, due to the constraints of parameters, determines the production of subjectivity [...]” (Rossiter, 2016: 120).

When Frederick W. Taylor died in 1915 – with a stopwatch in his hand (Merkle, 1980: 42; Pias, 2017: 32) – he left us the task of what Pias referred to as “programming operating systems” (Pias, 2017: 32). This technical reference can not only act as a metaphor but could be taken literally when we think of enterprise software as organizational *operating systems*: “Digital Taylorism” would then be Taylorism, inscribed into and performed by digital enterprise software. However, as the analysis of Salesforce in this article suggests, the concept of “digital Taylorism” seems to be more complicated than only assuming the continuity of Taylorism. To identify more discontinuities and new developments in the realm of organizational powers of digital media, future

research might concentrate on the empowering and enabling aspects of Salesforce. Thereby, new ranges of action that are created through the software could be explored. Additionally, a more systematic approach would be useful to further assess the infrastructural technological conditions of Salesforce. Considerably more work including fieldwork will be required to explore more nuances of what has been referred to as "digital Taylorism".

6. References

- Agre PE (1994) Surveillance and Capture: Two Models of Privacy. *The Information Society* 10(2): 101–127. DOI: 10.1080/01972243.1994.9960162.
- Aneesh A (2009) Global Labor: Algocratic Modes of Organization. *Sociological Theory* 27(4): 347–370. DOI: 10.1111/j.1467-9558.2009.01352.x.
- Beverungen A, Beyes T and Conrad L (2019) The Organizational Powers of (Digital) Media. *Organization* 26(5): 621–635. DOI: 10.1177/1350508419867206.
- Bowker GC and Star SL (2000) *Sorting Things Out: Classification and Its Consequences*. Inside Technology. Cambridge, Mass; London, England: MIT Press. Available at: <https://books.google.de/books?id=xHlP8WqzizYC>.
- Bröckling U (2007) *Das Unternehmerische Selbst. Soziologie Einer Subjektivierungsform*. Frankfurt/Main: Suhrkamp.
- Brown P, Lauder H and Ashton D (2010) *The Global Auction: The Broken Promises of Education, Jobs, and Incomes*. Oxford University Press. DOI: 10.1093/acprof:oso/9780199731688.001.0001.
- Conrad L (2017) *Organisation Im Soziotechnischen Gemenge*. Transcript.
- Davenport TH (1998) Putting the Enterprise into the Enterprise System. *Harvard Business Review* 76(4): 121–31.
- Dechow N and Mouritsen J (2005) Enterprise Resource Planning Systems, Management Control and the Quest for Integration. *Accounting, Organizations and Society* 30(7): 691–733. DOI: 10.1016/j.aos.2004.11.004.
- Dommann M (2017) Arbeit und Algorithmus. Die Medienwissenschaft entdeckt die Logistik und die soziale Frage. *CARGO. Film/Medien/Kultur* 35: 66–69.
- Drucker PF (1992) *Managing for the Future*. London: Routledge.
- Dyer-Witheford N (2015) *Cyber-Proletariat. Global Labour in the Digital Vortex*. London: Pluto Press.

- Economist T (2015) Digital Taylorism. a Modern Version of “Scientific Management” Threatens to Dehumanise the Workplace. *The Economist*. Available at: <http://www.economist.com/news/business/21664190-modern-version-scientific-management-threatens-dehumanise-workplace-digital> (accessed 19 February 2020).
- Fuller M and Goffey A (2012) *Evil Media*. Cambridge, Mass.: MIT Press.
- Galloway A (2004) *Protocol. How Control Exits after Decentralization*. Cambridge, Mass.: MIT Press.
- Gilbreth FB (1912) *Primer of Scientific Management*. New York: D. van Nostrand Company.
- Gregg M (2016) The Athleticism of Accomplishment: Speed in The Workplace. In: Wajcman J and Dodd N (eds) *The Sociology of Speed: Digital, Organizational, and Social Temporalities*. Oxford: Oxford University Press, pp. 102–114. DOI: 10.1093/acprof:oso/9780198782858.001.0001.
- Haigh T (2001) Inventing Information Systems: The Systems Men and the Computer, 1950-1968. *The Business History Review* 75(1): 15–61. DOI: 10.2307/3116556.
- Haigh T (2003) *Technology, Information and Power: Managerial Technicians in Corporate America, 1917–2000*. PhD Thesis. University of Pennsylvania, Philadelphia.
- Head S (2005) *The New Ruthless Economy: Work and Power in the Digital Age*. New York: Oxford University Press. DOI: 10.1093/acprof:oso/9780195179835.001.0001.
- Heintz B (1993) *Die Herrschaft der Regel: Zur Grundlagengeschichte des Computers*. Frankfurt; New York: Campus.
- Hoof F (2015) *Engel Der Effizienz: Eine Mediengeschichte Der Unternehmensberatung*. Konstanz: Konstanz University Press.
- Irani L (2015) Difference and Dependence Among Digital Workers: The Case of Amazon Mechanical Turk. *South Atlantic Quarterly* 114(1): 225–234. DOI: 10.1215/00382876-2831665.
- Kallinikos J (2011) *Governing Through Technology. Information Artefacts and Social Practice*. Basingstoke, UK: Palgrave Macmillan.
- Krajewski M (2011) *Paper Machines: About Cards & Catalogs, 1548-1929*. Cambridge, Mass.: MIT Press.
- Leffingwell WH (1917) *Scientific Office Management*. Chicago: A. W. Shaw.

- Lemov R (2018) Hawthorne's Renewal: Quantified Total Self. In: Moore PV, Upchurch M, and Whittaker X (eds) *Humans and Machines at Work: Monitoring, Surveillance and Automation in Contemporary Capitalism*. Cham: Springer International Publishing, pp. 181–202. DOI: 10.1007/978-3-319-58232-0_8.
- Locke J and Lowe A (2007) A Biography: Fabrications in the Life of an ERP Package. *Organization* 14(6): 793–814. DOI: 10.1177/1350508407082263.
- Merkle JA (1980) *Management and Ideology: The Legacy of the International Scientific Management Movement*. Berkeley and Los Angeles: University of California Press.
- Moore PV (2018) *The Quantified Self in Precarity: Work, Technology and What Counts*. London: Routledge.
- Moore PV, Upchurch M and Whittaker X (eds) (2018) *Humans and Machines at Work. Monitoring, Surveillance and Automation in Contemporary Capitalism*. Cham: Springer International Publishing. DOI: 10.1007/978-3-319-58232-0.
- Mormann H (2016) *Das Projekt SAP. Zur Organisationssoziologie Betriebswirtschaftlicher Standardsoftware*. Bielefeld: Transcript.
- Nachtwey O and Staab P (2015) Die Avantgarde des digitalen Kapitalismus. *Mittelweg* 36(24): 59–84.
- O'Neill C (2016) Taylorism, the European Science of Work, and the Quantified Self at Work. *Science, Technology, & Human Values* 42(4): 600–621. DOI: 10.1177/0162243916677083.
- Pasquale F (2015) *The Black Box Society: The Secret Algorithms That Control Money and Information*. Cambridge: Harvard University Press.
- Peters JD (2015) *The Marvelous Clouds Toward a Philosophy of Elemental Media*. Chicago; London: University of Chicago Press.
- Pias C (2017) *Computer Game Worlds*. Zürich: Diaphanes.
- Pinkham E (2020) *Chapter 2: How to Create A Return-To-Work Plan*. Salesforce Resource Center. Available at: <https://www.salesforce.com/resources/guides/create-a-return-to-work-plan/> (accessed 13 July 2020).
- Pollock N and Williams R (2009) *Software and Organisations: The Biography of the Enterprise-Wide System or How SAP Conquered the World*. Routledge studies in technology, work and organisations 5. London; New York: Routledge.
- Prassl J (2018) *Humans as a Service: The Promise and Perils of Work in the Gig Economy*. Oxford: Oxford University Press. DOI: 10.1093/oso/9780198797012.001.0001.

- Quattrone P and Hopper T (2001) What does organizational change mean? Speculations on a taken for granted category. *Management Accounting Research* 12(4): 403–435. DOI: 10.1006/mare.2001.0176.
- Raffetseder E-M, Schaupp S and Staab P (2017) Kybernetik und Kontrolle. Algorithmische Arbeitssteuerung und betriebliche Herrschaft. *PROKLA. Zeitschrift für kritische Sozialwissenschaft* 47(187): 229–248. DOI: 10.32387/prokla.v47i187.143.
- Rieder G and Simon J (2017) Big Data: A New Empiricism and its Epistemic and Socio-Political Consequences. In: Pietsch W, Wernecke J, and Ott M (eds) *Berechenbarkeit Der Welt? Philosophie Und Wissenschaft Im Zeitalter von Big Data*. Wiesbaden: Springer Fachmedien Wiesbaden, pp. 85–105. DOI: 10.1007/978-3-658-12153-2_4.
- Rossiter N (2016) *Software, Infrastructure, Labor: A Media Theory of Logistical Nightmares*. New York: Routledge Taylor & Francis Group.
- Salesforce (2017) *IBM and Salesforce Announce Landmark Global Strategic Partnership*. Available at: <https://www.salesforce.com/blog/2017/03/ibm-salesforce-strategic-partnership.html> (accessed 19 February 2020).
- Shenhav Y and Weitz E (2000) The Roots of Uncertainty in Organization Theory: A Historical Constructivist Analysis. *Organization* 7(3): 373–401. DOI: 10.1177/135050840073002.
- Taksa L (2017) Scientific Management. In: Wilkinson A, Armstrong SJ, and Lounsbury M (eds) *The Oxford Handbook of Management*. Oxford University Press. Available at: <https://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780198708612.001.0001/oxfordhb-9780198708612-e-2>.
- Taylor FW (1911) *The Principles of Scientific Management*. New York: Harper and Brothers.
- Taylor P and Bain P (1999) ‘An Assembly Line in the Head’: Work and Employee Relations in the Call Centre. *Industrial Relations Journal* 30(2): 101–117. DOI: 10.1111/1468-2338.00113.
- Taylor P, Mulvey G, Hyman J, et al. (2002) Work Organization, Control and the Experience of Work in Call Centres. *Work, Employment and Society* 16(1): 133–150. DOI: 10.1177/09500170222119281.
- Woodcock J (2017) *Working the Phones: Control and Resistance in Call Centres*. London: Pluto Press.
- Zuboff S (1988) *In the Age of the Smart Machine*. New York: Basic Books.

7. Figures

Figure 1: Lead Conversion Process. Created by the Author.

Figure 2: Role Hierarchy, viewed 19 Feb 2020, <http://salesforce.vidyard.com/watch/CwsXBB19WsU9qkVRytOx0A>, at 3:14.

Figure 3: Opportunity Detail View in Salesforce, viewed 19 Feb 2020.

Figure 4: Forecast View in Salesforce, viewed 19 Feb 2020.

Figure 5: Task List in Salesforce, viewed 19 Feb 2020.

Figure 6: Dashboard Overview, viewed 19 Feb 2020, <https://galvintech.com/effectively-manage-sales-pipeline-using-7-powerful-salesforce-dashboards/>

Figure 7: Detailed View of the Described Dashboard Element, viewed 19 Feb, <https://galvintech.com/effectively-manage-sales-pipeline-using-7-powerful-salesforce-dashboards/>