



Corso di Laurea Magistrale in International Economics and
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TESI DI LAUREA

**Disability Management:
Comparative Analysis between
Italy and U.S.A.**

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Abstract

This thesis explores the concept of Disability Management within organizations, focusing on the strategies that multinational companies implement to foster an inclusive work environment for individuals with disabilities. By comparing the approaches of Microsoft and Enel, the research highlights the varying methodologies in addressing Disability inclusion, from data-driven strategies and technological innovations to practical accessibility solutions. Microsoft's focus on leveraging data and assistive technologies contrasts with Enel's service-based approach, which emphasizes immediate solutions such as communication tools and physical accessibility improvements.

The study also delves into the international legal frameworks that shape Disability Management practices, including the impact of the United Nations Convention on the Rights of Persons with Disabilities (CRPD), the Americans with Disabilities Act (ADA), and European regulations. Additionally, the research assesses the economic benefits of disability inclusion, examining how effective Disability Management can lead to increased productivity, reduced costs, and enhanced corporate reputation.

By analyzing case studies and empirical data, this thesis provides a comprehensive overview of how Disability Management has evolved across different regions, highlighting the challenges and opportunities for companies aiming to create a more inclusive workplace. The findings suggest that while different industries and regulatory environments influence the methods used, the overarching goal remains the same: to enable individuals with disabilities to contribute fully and equally in the workforce.

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1 Introduction

Disability Management is increasingly becoming a crucial pillar of modern corporate governance and human resource strategies. This thesis examines the evolving landscape across multinational corporations such as Microsoft, Enel, FCA, and Ford, focusing on Italy and the United States. The analysis integrates historical perspectives, legal frameworks, economic benefits, and strategic corporate practices to understand how companies create inclusive work environments.

From the inception of Disability Management in the United States and Canada to its development in Europe, the study traces how legislative frameworks like the Americans with Disabilities Act (ADA) and Law 68/1999 in Italy have shaped corporate policies. Companies in both regions face diverse challenges but share the common goal of integrating individuals with disabilities into their workforce.

The thesis dives deep into the economic benefits of Disability Management, demonstrating that well-implemented strategies not only ensure compliance but also enhance productivity, reduce costs, and improve employee well-being. Ergonomic interventions, such as those employed by FCA, and assistive technologies developed by Microsoft, highlight the innovative approaches companies take

to address these challenges.

Finally, by comparing the regulation-driven approaches of Italian firms to the proactive inclusivity strategies of American companies, the research underscores the importance of cultural and legal environments in shaping Disability Management practices. Through this analysis, it becomes clear that inclusivity is not merely a matter of regulatory compliance but a fundamental driver of corporate innovation and success.

2 Disability Management: History and Development

2.1 Disability: Definition

“Disability Management can be defined as a proactive process that minimizes the impact of an impairment, resulting from injury, illness or disease on the individuals’ capacity to participate competitively in the work environment” (Shrey 1995)”

External rehabilitation services are moved and expanded into on-site vocational rehabilitation policies, practices, and training to signify the start of this activity.

Before analyzing the steps that bring this practice in the “New continent” first and all around the world in a second, we should focus on those elements that are crucial objects of the study. Is not possible go into details without knowing who we’re referring depths to and certainly without understanding the meaning of the word ”disability”.

The World Health Organization (WHO) describes and defines disability as “the outcome or results of a complex relationship between and individual’s health conditions and personal factors, and of the external factors that represent

the circumstances in which the individual lives.” (World report on Disability, p.17)

This concept is deeply rooted with the Convention of the Rights of Person With Disabilities (CRPD), where people with disabilities are defined as those “who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others.” (United Nations, CRPD article 1).

It’s clear that two are the main terms of the “equation”: “health conditions of individuals” and “environment”.

Starting from the 90’s, Disability Management became a common practice in the American and Canadian Corporations.

2.2 The Birth of Disability Management in the United States

In the United States, Disability Management born with the purpose of balancing Firm's interests and worker's needs.

Enacted formally in 1990, DM's aim was to respect the Americans with Disabilities Act (ADA) which imposed to corporations to provide reasonable accommodations for employees with disabilities, including those who have been injured while performing work-related activities.

The mentioned legislation has been crucial in promoting Disability Management in the workplaces and ensuring an active productive capacity for those employees who got injured or for those who presented disabilities, allowing them to be considered as positive values for the firm itself.

In an Economic approach, Workers' compensation expenditures increased quickly as a result of the legislative explosion.

In the period from 1972 to 1979, known as "The Era of Reform", the annual increase rate rose from 8.5 % (referred to the period 1960-1971) to 15.8% .
(Thomason,Schmidle,Burton,2001; p. 22)

In the meantime, in Europe, the World Rehabilitation Fund sponsored a lecture held by Aila Jarvikoski of the Rehabilitation Foundation of Helsinki

about a study conducted among Helsinki's employees.

The aim was to identify those who needed early rehabilitation in order to avoid disability, providing work redesign and job reassignment. (Tate, Habeck, Galvin, 1986; p.7)

This study highlighted that 43 % of salaried employees presented at least one chronic illness and 8 % needed health measures to treat disorders.

These workers were invited for assessment and an occupational health nurse, a rehabilitation counselor and physician made up the early rehabilitation team.

The occupational health nurse conducted an initial interview, after which the rehabilitation counselor reviewed workplace concerns and the rehabilitation physician performed a physical examination.

The workplace was evaluated as well, if needed.

Following the team's evaluation of the worker's circumstances, the rehabilitation counselor would schedule a meeting with the worker to discuss the implications of the results and to schedule the necessary "early rehabilitation" activities to stop worsening incapacity. Eight percent of referrals at the Water Works and 23 percent at the Port Authority required new job assignments, even though the bulk of treatments were instructional in nature. Workers at both sites asked for the trial programs to continue when they ended.

Even though the program born in Europe (a topic that will be analyzed in the following chapters), its mention is crucial to understanding the American scenario.

In fact, the same technique (early rehabilitation) was applied in North Carolina at Burlington Industries, in a program aimed to manage osteoarthritis and rheumatoid arthritis among employees. (Mitchel & Winfield, 1980)

For the first-time employers start to understand that they might have the capability to control disability costs through Disability Management's tools.

Independent Disability Management consultants shared the advantages of their work with governmental agency systems and employers getting as result a pool of practices in health promotion and risk reduction released by the Washington Business Group on Health.

“This manual enables companies to avoid the costs and frustrations of trial and error by sharing with readers the practical lessons learned by other companies. It provides a simple step-by-step process for program design, development and implementation”.(Disability Management: A complete system to reduce costs, increase productivity, meet employees needs and ensure legal compliance; Sheila H. Akabas, Lauren B. Gates, Donald E. Galvin, 1989)

Throughout the 1980s and into the present, growing health care expenses

have also drawn attention to Disability Management strategies. A growing number of companies realized that by emphasizing disability prevention more than they were paying for health insurance, they could better control the costs of their short- and long-term disability programs.

Aside from financial savings, the developing profession of Disability Management had a substantial social welfare component. Following the enactment of the ADA in 1990, (as mentioned above) there was increased demand to accommodate disability in the workplace and public institutions. In Canada, the concept of Disability Management began gaining traction thanks to the introduction of comprehensive legislation aimed, as the American case, at protecting the rights of people with disabilities.

2.3 The Canadian legislation

The Canadian Government, following the steps of the American one, began to recognize the critical importance of keeping individuals with disabilities engaged in the labor market.

Key legislative steps, such as the Canadian Human Rights Act published in 1985, and the Employment Equity Act published in 1986 have established the groundwork by outlawing discrimination and requiring employment accommo-

dations for people with disabilities. “For all purposes of this Act, the prohibited grounds of discrimination are race, national or ethnic origin, colour, religion, age, sex, sexual orientation, gender identity or expression, marital status, family status, genetic characteristics, disability and conviction for an offence for which a pardon has been granted or in respect of which a record suspension has been ordered.” (Canadian Human Rights Act, 1985)

It’s up to employees to ensure that companies’ practices are not discriminating, in any form, individuals based on prohibited grounds.

The Employment Equity Act enacted in 1986 required employers to actively remove barriers to employment and to promote the inclusion of people with disabilities in the workforce: “ The purpose of this Act is to achieve equality in the workplace so that no person shall be denied employment opportunities or benefits for reasons unrelated to ability and, in the fulfilment of that goal, to correct the conditions of disadvantage in employment experienced by women, Aboriginal peoples, persons with disabilities and members of visible minorities by giving effect to the principle that employment equity means more than treating persons in the same way but also requires special measures and the accommodation of differences.” (Employment Equity Act 1986)

Considering the sentence mentioned above, are considered persons with dis-

abilities all persons who have a long-term of recurring physical, mental, sensory, psychiatric or learning impairment and who:

A consider themselves to be disadvantaged in employment by reason of that impairment, or

B believe that an employer or potential employers is likely to consider them to be disadvantaged in employment by reason of that impairment,

and includes persons whose functional limitations owing to their impairment have been accommodated in their current job or workplace.

So that, Employers have the duty to develop policies and practices to ensure that their workplaces are welcoming to everyone, regardless of disability.

The compliance of the Act is on Canadian Human Rights Commission's hands which must ensure that employers are respecting the Act.

Going further into details, the Commission conducts compliance audit to assess whether employers are meeting their obligations and to ensure that genuine efforts have been made to remove any kind of barriers.

All the gained informations are collected in annual reports to provide valuable data and highlight areas where further improvement is needed.

“The role of CHRC is crucial for ensuring that the objectives of the acts and

legislation are met, and that workplace become more inclusive and representative of the diverse Canadian population.” (Canadian Human Rights Commission Submission to the Employment Equity Act Review Task Force, 2022)

Despite the birth of Disability Management seems quite similar in both American and Canadian legislative systems, the approach and perspective of society itself are different from each other.

United States’ approach was heavily compliance-based; employers were driven by the need to respect federal laws in order to avoid penalties or Government fines instead of the real pursuit of equity in the workplace.

Companies frequently relied on external consultants and advisors to understand the complexity of the law system, highlighting a focus on avoiding legal compliance and preventing discrimination.

On the other hand, the Canadian approach was proactive and holistic; institutions like the Council on Rehabilitation and Work (CCRW) helped individuals with disabilities pursuing a job position and maintain employment, supporting both involved parts in creating an inclusive and stimulating workplace environment.

In addition to that, a key role in the Canadian DM's history has been played by no-profit organizations such as the "National Institute of Disability Management and Research" (NIDMAR) who has not only raised awareness about the importance of accommodating employees with disabilities but has also fostered a culture of inclusivity in Canadian Workplace.

Nowadays, NIDMAR continues to lead efforts in integrating Disability Management into organizational policies, demonstrating that this topic is still subject to developments and further exploration, necessary for drafting best practices that can enable each individual to experience maximum equity, consideration, and respect for their role in the workplace, regardless of whether the worker has a disability or not.

Following the evolution of Disability Management in the United States and Canada, where legislative frameworks such as the Americans with Disabilities Act (ADA) and the efforts of organizations such as the National Institute of

Disability Management and Research (NIDMAR) shaped inclusive workplace practices, Europe began to develop its own approaches to Disability Management in the 1990s.

2.4 The European scenario

Although the practice of Disability Management began to develop in North America in the 1980s, particularly in the United States and Canada, Europe had to wait several more years before seeing its implementation in legislative decrees and European laws.

Germany was one of the first to establish comprehensive Disability Management techniques. Its strong social insurance system aided the inclusion of people with impairments into the workforce.

The adoption of the German Social Code Book IX (Sozialgesetzbuch IX) in 2001 was a watershed moment, giving a precise framework for handicapped workers' rights and support systems, including required workplace reintegration management and preventive measures.

Similarly, the United Kingdom achieved significant headway with the Disability Discrimination Act (DDA) of 1995, which was later strengthened by the Equality Act (2010).

The DDA sought to eliminate discrimination against handicapped people in a variety of fields, including employment, education, and transportation.

The Equality Act unified and enhanced existing anti-discrimination legislation, fostering a more inclusive and equal employment environment by mandating reasonable changes and accommodations for individuals with disabilities.

Scandinavian countries, which are recognized for their vast social welfare programs, have also taken a proactive approach to Disability Management.

Sweden, for example, has adopted robust regulations through the Swedish Social Insurance Agency, with a focus on job adaptations and vocational rehabilitation.

Denmark has built comprehensive assistance through its flexible model, which combines the labor markets with large welfare and active labor market regulations to enable work for people with disabilities.

Norway has also adopted Disability Management through collaborative efforts between governmental authorities, employers, and labor unions, guaranteeing strong support networks for preserving employment or reintegrating persons with impairments.

These European efforts demonstrate that Disability Management remains an evolving field, necessitating ongoing developments and deeper insights to

establish best practices that ensure maximum equity, consideration, and respect for every individual's role in the workplace, regardless of disability status.

German and Swedish systems are highly regulated in determining labor market interventions that control hiring, tenure of employment, and dismissal procedures.

In contrast, North American and other English speaking countries such as Canada, the United States, New Zealand, and the United Kingdom do not impose regulated practices, but through legislation, attempt to encourage practices that promote job retention and employment for persons with disabilities. (Journal of Occupational Rehabilitation, Vol.9, No1.,1999)

For Example, as mentioned before, in the States the ADA (Americans with Disabilities Act) doesn't set a specified quotas or mandatory practices but encourages employers to hire people based on abilities.

So that, if a person believes they are being discriminated because of their handicap, it is their obligation to present a complaint to the company, since the United States' approach might be considered as retroactive rather than the Canadian one.

While some countries such as Germany, Switzerland, Netherlands or Germany lived a development of Disability Management and can be considered at

the forefront of the practice, other countries as Italy or France are significantly lagging in the institutionalization process.

2.5 The Italian legislation

In Italy, it was not until the late 1990s that we observed the first instances of Disability Management being adopted as a corporate practice, particularly in companies in Northern Italy. (La Torre, De Giusti, Mannocci, Agostinelli, Schena, 2009)

The United Nations Convention on the Rights of Persons with Disabilities, approved and issued in 2006, defines persons with disabilities as those who have long-term physical, mental, intellectual, or sensory impairments which, in interaction with various barriers, may hinder their full and effective participation in society on an equal basis with others.

In Italy, prior to the United Nations Convention, Law 68 of 1999 titled "Norme per il diritto al lavoro per disabili" addressed the employment of people

with disabilities by requiring companies to:

- Employ 1 worker with a disability if the number of employees is between 15 and 35.
- Employ 2 workers with disabilities if the number of employees is between 36 and 50.
- Employed workers with disabilities amount to 7 % of the total workforce if the number of employees exceeds 50.

The objective of this law is not just a regulatory obligation but also the inclusion of individuals in a work environment that can highlight their personal characteristics and skills. (Electronic Journal of Management, n.1, 2016, Veronica Mattana)

It was not until 2003 that Legislative Decree 216 was introduced, through which Italy implemented the EU Directive 2000/78/EC to ensure equal treatment irrespective of, as stated: religion, personal beliefs, health status, age, and sexual orientation. (Disability Management: Critical Issues and Training Perspectives, Amatori, Giorgi, 2020).

As a result of the emergence of Disability Management as a practice within corporate environments, the role of the Disability Manager was created.

According to Rodolfo Della Mora (President of S.I. Di. Ma.), this should be considered more of a competence than a profession (Ribul Moro, Cinzia Marostegan, La figura del disability manager tra buone prassi e prospettive, 2020).

The Disability Manager operates according to the principle of equity, which aims to put all workers in the same conditions to perform their duties optimally, beyond the principle of equality that requires the same treatment for everyone.

This aspect necessitates a shift in organizational culture from equal treatment for all to equitable treatment in diversity.

In the United States, there is a strong emphasis on equality and non-discrimination.

American culture places great importance on equal rights and the fight against discrimination, often through legal actions and advocacy.

This is reflected in the daily work of disability managers, who are often integrated into human resources departments and involved in the strategic decision-making processes of companies.

In Italy, on the other hand, the approach is more regulatory and compliance-focused, with particular attention to the observance of laws and specific regulations rather than a widespread cultural integration.

The role of the disability manager is still developing, with increasing awareness and adoption by companies, but it is not yet as deeply rooted as it is in the United States.

Lastly, examining professional practices, in the United States, disability managers have access to specific certification programs, such as those offered by the National Institute of Disability Management and Research. (NIDMAR)

Moreover, there is widespread use of advanced assistive technologies to enhance accessibility and productivity for workers with disabilities.

This represents an additional tool in the hands of American disability managers to promote an inclusive work environment.

In Italy, training for disability managers is growing, often offered in collaboration with universities and specialized institutions, but it is less standardized compared to the United States.

The work of disability managers in Italy often focuses on ensuring companies comply with hiring quotas and local regulations, while also promoting inclusion and accessibility.

There is an emphasis on regulatory compliance, with a practical approach aimed at effectively integrating people with disabilities into the workplace in a manner that respects legal requirements.

Disability Management calls for another shift in perspective: from viewing disability as a problem to be managed within the company, to seeing disability as one of the possible diversities among the organization's collaborators—diversities that should be recognized, embraced, and valued as potential resources that can generate new ideas and opportunities for innovation.

Specifically, the role of the DM spans three different areas:

- Prevention of disability (Work Disability Prevention, WDP);
- Support and facilitation activities during the return to work after a significant period of absence (Return to Work, RTW);
- Implementation of reasonable accommodation measures (Individual Placement and Support, IPS).

The process begins with a meeting between the employer and the employee to discuss the individual's health status, work competencies, and any specific needs they might have. Following this discussion, a shared intervention plan is developed, which includes the implementation of reasonable accommodation if necessary. The plan also considers the potential involvement of colleagues in the process.

Additionally, a training program is structured for all parties involved in the inclusion plan.

Regular follow-up meetings are scheduled to monitor and evaluate the intervention both during its implementation and upon its completion.(E. Zappella, Verso il Disability Mangement integrato all'interno delle organizzazioni lavorative: analisi di alcune ricerche empiriche, XV2-2017, pag. 355-367)

The concept of reasonable accommodation originates from U.S. legislation and is also found in the United Nations Convention on the Rights of Persons with Disabilities of 2006.

It can be described as the set of changes that organizations are required to implement in order to facilitate the work of employees with disabilities, ensuring full equality with other workers.

The JAN (Job Accommodation Network) website offers a comprehensive database that, depending on a specific health concern, recommends the most appropriate and acceptable accommodation options. The issue of accommodations must be properly considered and managed, particularly when it comes to mediating with other stakeholders within the company. Indeed, the accommodation may be regarded as discriminatory by the person with a handicap or as giving coworkers an unfair advantage, especially if the condition is not obvious.

An accommodation is considered successful when:

- It enables the employee to complete the required tasks with acceptable quality and within defined timeframes.
- It benefits both the employee and the organization.
- It helps improve relationships among colleagues.

(Emanuela Zappella, Purché dia il suo contributo: gli accomodamenti ragionevoli per i dipendenti con disabilità nel territorio lombardo, Formazione e Insegnamento, XII 3-2014)

Based on what has been discussed so far, we can interpret the Disability Manager as a mediator who identifies, activates, and coordinates internal company resources (such as the human resources manager, for example) as well as external resources, with the aim of integrating the person in difficulty into the workplace as effectively as possible and promoting job retention. (Girelli, Ribul Moro, 2019 p. 25).

3 Empirical Analysis: Comparison between Usa, Italy and Europe

3.1 Challenges in economic evaluation methods

When managers and others focus on OHS (occupational health and safety) concerns, it is usually to lower workers' compensation expenses.

However, workers' compensation expenditures are a poor proxy for the entire cost of work-related injuries and illnesses suffered by all stakeholders. Workers' compensation does not cover indirect expenditures such as housing, recruiting and training costs associated with replacing injured workers, and missed home output.

The lack of understanding about the financial benefits of OHS initiatives is mostly attributable to the fact that few studies of such interventions include an economic evaluation. This is due, in part, to OHS researchers' lack of proficiency in economic evaluation methods. Because their training does not often involve comprehensive teaching in economic methodologies or financial analytic tools, these experts tend to focus on assessing the health-effectiveness of treatments rather than their cost-effectiveness.

An accurate valuation of costs and consequences can present some critical

challenges that are not apparent at first blush.

Specifically, three issues stand out:

- Identifying pricing that accurately reflect the value of resources included in the costs and effects being considered.
- Identifying pricing that is in line with the perspective adopted.
- Measuring the incremental costs and repercussions of an action rather than the overall expenditures paid and outcomes accomplished.

The first issue may arise when prices are created within a company for accounting purposes, allowing for transfers and billing between departments. If these prices do not accurately reflect market rates, one might go to the market to find costs for equivalent items or services. When a competitive market does not exist, a premium may be paid for a good or service (e.g., specialist clinical services, innovative pharmaceutical drugs). So that adjustments can be made looking at the prices of related or similar services and products. The second issue may arise when several stakeholders share costs or repercussions, and it can be challenging to determine pricing that aligns with their perspectives. This is especially important for insurance expenditures reimbursed by third-party payers, such workers' compensation, medical care, and private indemnity insurance.

Due to limited expertise, some organizations may not be invoiced for the entire amount of a claim.

Taking a societal perspective, insurers may underestimate true costs due to co-payments and uninsured expenses incurred by both workers and employers.

The third key issue is to consider the incremental costs of an intervention, rather than the total costs. Some costs incurred during the intervention period would still occur if the status quo or comparator option was chosen.

When comparing programs in an economic evaluation, it's important to identify the incremental costs and consequences of each intervention. For example, an ergonomics intervention may not fully justify the cost of workstation and equipment purchases, especially if they were planned beforehand. Only the incremental cost of purchasing a more expensive, ergonomically designed workstation and equipment would be considered.

(Journal of Occupational Rehabilitation: Practice and potential of economic evaluation of workplace-based interventions for occupational health and safety, Tompa, Dolinschi, Oliveira, 2006)

3.2 Business case for implementing two ergonomic interventions at an electric power utility

In the study conducted by Patricia A. Seeley and Richard W. Marklin, titled "Business case for implementing two ergonomic interventions at an electric power utility", we can see a practical example of how the economic evaluation of OHS interventions can be implemented. This study examines two ergonomic interventions designed to reduce the risk of injuries and improve worker productivity at an electric power utility.

The study was initiated to evaluate and justify the cost-effectiveness of ergonomic interventions for reducing musculoskeletal disorders (MSDs) among line workers at a large Midwestern electric utility in the US. Funded by the Electric Power Research Institute (EPRI), the research involved collaboration with a local university and included a team of workers and management from the utility. Between January 1999 and July 2001, the utility reviewed many major areas connected to musculoskeletal diseases (MSDs) among its line personnel. Here are the major points:

- **Medical and Workers' Compensation Costs:** The utility investigated medical and workers' compensation costs for 47 cases of MSDs that

required time off work. This time off was either Lost Work Days (LWDs) or Restricted Duty (RD) days.

- **Total Number of MSDs:** A total of 167 MSD cases were reported among 370 line workers. These cases included both those that required time off work and those that did not. However, comprehensive cost figures for all of these injuries were unavailable because some workers obtained care from private physicians, and the business administering the utility's workers' compensation claims did not give some cost information.
- **Training and Productivity Costs:** The utility analyzed the expenses of training and productivity for apprentice line workers who were being groomed to become permanent replacements for skilled personnel.
- **Personnel Records:** The study included personnel data for line workers who had departed their positions.
- **Hourly Wages and Benefits:** The hourly pay and perks for various line worker job classes were also examined.
- **Replacement Worker Costs:** The utility calculated the expenses of employing replacement workers for skilled line workers who were unable to

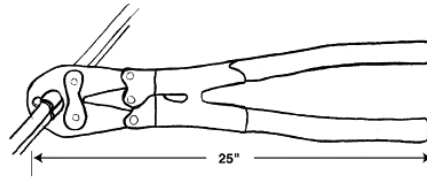


Figure 1: A compression connector crimped with a manual compression press (EPRI,2001)

execute their duties owing to temporary RD, permanent partial disability, or LWDs caused by injury recuperation, surgery, or rehabilitation.

In a musculoskeletal survey of 152 active line workers from three US electric power utilities (one Midwestern, one Southeastern, and one Southwest), 99 reported severe MSD symptoms from the use of two tools: a manual compression press and a variety of wire cutting tools.

They described persistent discomfort in their elbows, shoulders, backs, and other body areas. In fact, an anthropometric investigation revealed that less than 1 percent of the general population could crimp a standard pair of wires using a manual compression press. (EPRI, 2001).

Manual compression refers to a typical press with a weight of 3 kilograms and a length of 25 inches. (approximately 65 centimeters), while the battery-operated press is approximately 4.5 kg, 33 cm long, and 30 cm tall.

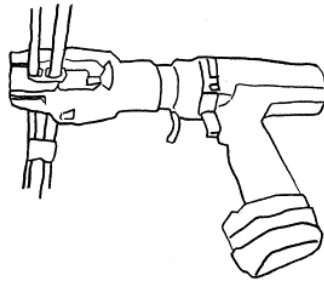
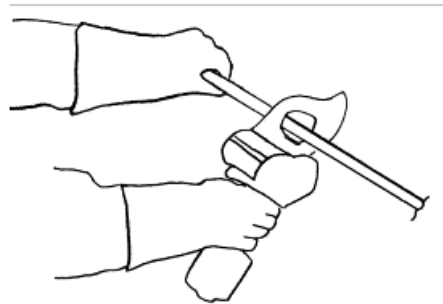


Figure 2: A compression connector crimped with a manual compression press (EPRI,2001)

Different methods were used to perform a wire cutting:



(a) A line worker cutting a large diameter wire with a manual cutter (EPRI, 2001)



(b) A battery-operated wire cutter (EPRI, 2001)

“The line worker placed the head of the cutter onto the wire and then squeezed the handles closed. This motion was repeated several times for the

ratchet cutter. Sometimes line workers supported one handle of a manual cutter with their torso or shoulder and pulled the other handle with two hands, as illustrated in Fig. a.

A battery-operated cutter (2.3 kg and 38 cm long), shown in Fig. b, was available for cutting wire at least as large as 1000 kcmil. The line worker placed the open blade over the wire and pressed the trigger until the wire was cut.” (Business case for implementing two ergonomic interventions at an electric power utility Patricia A.Seeleya, Richard W.Marklinb, pag 432)

The main topic of the study concerns the effects of using the battery-operated press rather than the manual one and how this choice can affect the occupational health of utility’s line workers.

Risk factors of MSDs related to the battery-operated press are shown in the following table:

Table 1: Risk factors of MSDs from making compression connections with the manual press and improvements with the battery-operated press

Risk factor	Manual press risks	Improvement with battery-operated tool
Amount of handle force required to compress a 10-42 wire pair is approximately 311 N at the outer die location of the manual press	Only 1% capable of the general population has the peak force to make this connection	Nearly all workers capable
High shoulder force exertions working from a pole	Peak shoulder muscle EMG using the manual press was over 50% MVC (maximal voluntary contraction)	Reduced from over 50% MVC to 30% MVC (40% relative reduction)

Peak forces of flexor muscles in forearm from working on pole	Peak EMG of 90% MVC	Peak decreased from 90% MVC to 60% MVC (a 33% relative reduction)
Peak forces of flexor muscles in forearm from working in bucket	Peak EMG of 100% MVC	From 100% MVC to 60% MVC (a 40% relative decrease)
Jarring action of manual compression tool	Not measured, but substantial	Eliminated 100%; virtually all workers capable
Twisted and awkward trunk postures		Improved posture from the bucket

Table 2: Risk factors of MSDs from cutting wire with manual tools and improvements

with the battery-operated cutter

Risk factor	Current practice risks	Improvement with battery-operated cutter
High upper extremity force exertions to close cutter handles	Operating a cutter is similar to operating a manual press	Substantially reduced
Forceful lowering of arms (shoulder adduction)	High forces exerted by the upper extremity and shoulders although not measured	Substantially reduced with a finger pull on the trigger
Arms raised above shoulder level (shoulder abduction)		Substantially reduced
Jarring action from quick drop in force when wire is cut		Eliminated

Repetitive upper extremity exertions using the ratchet cutter		Eliminated
Twisted and awkward trunk postures from bucket		Improved posture

It was expected that lowering or eliminating risk factors for upper extremity MSDs would result in considerable savings on medical, workers' compensation, replacement workers, and retraining expenditures. Furthermore, the utility's corporate ergonomist believed that retaining skilled people longer and healthier at work while also increasing their quality of life would result in a productivity boost.

Utility's medical and workers' compensation costs for 47 musculoskeletal disorder injuries, which resulted in lost workdays or restricted duty days from January 1999 to July 2001, offer a revealing look at the financial impact of such injuries. Upper extremity injuries emerged as the most costly, amounting to \$179,296 in total medical costs, indemnity, and reimbursements for various expenses like drugs, parking, and transportation. When these costs are annualized, they translate to \$71,718, or \$194 per employee. This significant expense underscores the severity and frequency of upper extremity injuries in the workplace.

Neck injuries followed closely behind, with total costs reaching \$160,573. Annualized, these costs are \$64,229, which equates to \$174 per employee. Although slightly lower than upper extremity injuries, neck injuries still represent a substantial financial burden, highlighting the need for targeted preventive

measures.

Knee injuries, while less frequent, resulted in a total cost of \$46,307. Annualizing these costs gives us \$18,522, or \$50 per employee. Although this figure is lower than those for upper extremity and neck injuries, it still contributes to the overall financial impact.

Back injuries accounted for \$92,429 in total costs. When annualized, this amount becomes \$36,971, equating to \$99 per employee. The costs associated with back injuries, though not as high as upper extremity or neck injuries, are still significant, reflecting the common occurrence and impact of such injuries in the workplace.

In total, these injuries amounted to \$ 478,605. Annualized, the costs are \$191,440, which averages to \$ 517 per employee for a workforce of 370. This comprehensive analysis emphasizes the importance of investing in preventive and safety measures. By addressing the root causes of these injuries, a company can not only improve the health and well-being of its employees but also achieve significant cost savings. The financial implications of these injuries are clear, demonstrating the need for effective interventions to reduce the occurrence of musculoskeletal disorders and their associated costs.

It is clear at this point that in addressing the issue of injured workers, the company had to consider the necessary steps and, most importantly, the costs involved in the process of selecting replacement workers and the subsequent impacts on productivity and workforce management.

The training program is structured into several components, each with specific associated costs. The "Weekend Crash Course," which involves activities like climbing electric poles and an introduction to job hazards, is tailored to be 12–24 hours long, depending on whether the participant is internal or external. The cost per trainee is \$19 per hour, amounting to a total cost of \$228–\$456 per trainee.

An additional phase, labeled the "Initial Dropout Phase," accounts for individuals who drop out due to physical demands or fear of heights, averaging three dropouts per year. The cost per dropout is estimated at \$1500 per trainee. The core of the training program is the three-year Apprenticeship Program, requiring 480 hours of training per year. This program costs \$27 per hour, translating to \$13,000 per apprentice. Productivity losses during training periods are noted, specifically the need for skilled line workers or leads to supervise apprentices. Workers assigned to light duty, meaning they are restricted from performing their regular jobs, also contribute to these losses.

The company faces additional clerical and processing costs, calculated at approximately \$300 per replacement worker. Reassignment costs are incurred when workers with significant injuries are moved to less demanding roles, occasionally at higher pay grades. Four workers have been formally reassigned to less physically demanding jobs in recent years, and many others either left the company or transitioned into supervisory positions.

The deployment of battery-operated tools is shown to be a cost-effective strategy that not only enhances worker safety but also delivers measurable economic benefits.

3.3 Economics benefits

Benefit assumptions

- **Medical and Worker compensation cost-benefit=73,411\$**

$$\beta = \frac{1.08 \times 135,947}{2} = \$73,411$$

$$\beta = \textit{projected annual benefit}$$

Represents the result obtained by multiplying 135,947\$(which is the worker compensation cost) by an 8% increase value of medical insurance divided by two because a projection of a half reduction in severe injuries was deemed a conservative estimate, given that the use of these tools far exceeds the strength capabilities of 99% of the general population, and personnel data indicated that few were able to avoid upper extremity injuries as a result of their use after several years of exposure.

- **Replacement workers costs=\$25,344**

Human resources provided three different kinds of replacement workers:

- Short term: 1-8 weeks. The replacement worker must be ready when called.

- Long term: 2-12 months. Replacement worker must be skilled and well prepared
- Permanent: The replacement worker is an apprentice who needs training for the first years. Only 10% of Retirees' workers have been substituted by apprentices, which means that to retain its 370-person workforce, the company spent a significant amount of money and effort replacing non-retired line workers.

$$\beta = \frac{(440/2.5) \times (36 \times 8)}{2} = \$25,344$$

β = annual cost in wages and benefits for replacement workers

Represents the result obtained by 440 which is the number of day missed for injuries divided by 2.5 (database time period) and multiplied by the value of average rate of pay plus benefits per day.

As in the preview formula, only half of the final result will consider to respect the idea that increasing strength capability from 1% to almost 100% of the general population would result in the biggest occupational health benefit of all treatments studied.

- **Reduction in retraining costs for new apprentices=\$45,500**

$$\beta = \frac{(13,000 \times 105)/3}{10} = \$25,344$$

β = annual projected reduction in the training costs for new apprentices

Represents the results obtained by multiplying the costs related to new apprentices' training (13,000\$) times 105 new apprentices distributed in 3 years.

A modest decrease of just 10% fewer apprentices was predicted, even though 90% of new apprentices replace workers with long-term injuries and only 10% replace retirees.

- **Reduction in costs of upper extremity late reporting=\$40,000**

$$\beta = 20,000 \times 2 = \$40,000$$

β = average benefit of the reduction in labor and medical costs for unreported injuries

Represents the results obtained by multiplying the value of estimated benefit obtained by the reduction in medical and labor costs (20,00\$) times 2 which represents the number of cases per year.

The total annual savings from purchasing the two battery-operated tools (obtained by the sum of Betas' values from previous equations) amounted to

\$184,255, which is approximately \$498 per line worker per year. For the 100 crews, at a cost of \$3000 per crew (\$2000 for the battery press and \$1000 for the battery cutter), the estimated initial cost for these battery-operated tools was \$300,000. The tools are expected to need replacement every 5 years, although industry contacts suggested that many of these tools have a useful life of 8–10 years.

The capitalized payback period for providing each of the 100 overhead distribution line crews with a battery-operated press and cutter was calculated to be 4 months. This short payback period underscores the economic effectiveness of the investment in ergonomic tools, further supporting the decision to implement these technologies to improve working conditions and reduce injury-related costs.

3.4 Italian economics efforts

As mentioned previously, In Italy ergonomics and Disability Management have not achieved the same level of legal formalization as in the United States, but they are still considered essential components for improving productivity and reducing costs. The Italian approach tends to focus more on regulated interventions related to the labor market, such as the determination of hiring procedures, employment duration, and dismissal procedures, although they are not as strictly codified as in other European countries. While in the United States, ergonomics and Disability Management are primarily driven by laws such as the ADA, in Italy the focus is more on regulatory interventions aimed at ensuring worker safety and well-being, though with a less direct impact on productivity compared to the American approach. According to INAIL's report, in 2021 ,more than 564.000 injuries in the work place have been reported, a reduction of 1,4% less than the previous year.

In Italy, thanks to Isi incentives, which allowed companies to get a non-refundable loans, more than 36.000 have been accepted in the program and getting the chance to upgrade health and security's' levels inside the firm. (INAIL: relazione annuale infortuni e malattie professionali, 26 Luglio 2022)

The Italian ‘Social cooperatives for the labour market participation of disadvantaged persons’ consider providing financial and social security support to social companies that create job possibilities for disadvantaged individuals while pursuing social goals.

The ‘Social cooperatives’ provision allows enterprises to enforce quotas by using the services of social cooperatives that employ workers with disabilities. The ‘Conventions for the Labour Market Integration of individuals with Disabilities’ aim to foster agreements between PES and employers to facilitate the integration of individuals with disabilities and meet the obligatory objective. These agreements outline employment circumstances for workers with impairments, including tasks, assistance, and monitoring requirements. (V.Patrini, D. Ahrendt, Disability and labour market integration: Policy trends and support in EU Member States ,pag. 24)

In Italy, the National Institute for Insurance against Accidents at Work (INAIL) sponsors a program designed to help workers reintegrate into the workforce after suffering a workplace injury. This support includes workplace adaptations and retraining initiatives, such as learning how to use newly adapted workstations or acquiring new skills to perform different job tasks. The goal is to ensure that injured workers can safely return to productive employment, reduc-

ing the risk of further injuries while enhancing their well-being and efficiency.
(V.Patrini, D. Ahrendt, Disability and labour market integration: Policy trends
and support in EU Member States ,pag. 26)

The Italian Survey on People with Disability, carried out in 2004 by Istat
(Italian National Institute of Statistics) is directed to Italian disabled persons
who live in households (institutionalized people are excluded) and aims to ana-
lyze their social integration in everyday life.

1632 individuals had been considered in this survey and the descriptive evi-
dence obtained show that, concerning the working conditions, physical disabled
can achieve higher position in a firm despite the intellectual ones, which face a
worse conditions.

Results also confirm the negative effect of a precarious health condition (be-
cause of disability, chronic diseases or both) in access the labour market, as well
as the disadvantage faced by women, especially if married.

These findings imply that the integration of individuals with disabilities
into the labor market requires the participation of all operators, particularly
educational institutes, health services, and labor offices, as well as targeted
interventions aimed at certain groups of handicapped people, such as women.

(T. Addabbo, J. Krishnakumar, E. Sarti, Does disability discourage? An

empirical analysis of the disabled labour force in Italy,2012, pag. 26)

It's no coincidence that Disability Management, unlike in the United States, only began to emerge and spread in Italy from the new millennium onward, within a very different context than that of the U.S., where the culture places great emphasis on equal rights and the fight against discrimination.

In Italy, however, the approach is more focused on compliance, with particular attention given to the observance of laws and regulations rather than cultural integration. This likely explains why, unlike in the States, it is challenging to find studies in Italy that analyze the economic benefits of Disability Management in a corporate setting, given the relatively recent adoption of this best practice.

These conditions, unlike in the United States, do not allow for the consolidation of Disability Management within Italian corporate welfare. Trends indicate that Italy is lagging behind other European countries and that, in particular, the business fabric—mainly composed of SMEs—is not yet ready to adopt and spread this best practice. For people with disabilities, whose participation in the open labor market is more challenging, there is a need to establish forms of sheltered or supported employment. There are multiple approaches to promoting the participation of people with disabilities in the labor market. On one hand, some countries prefer to implement qualifying and proactive measures, focusing primarily on training and (re)skilling, alongside the provision of subsidies. On the other hand, some countries favor "workfare" measures, which often require individuals to accept employment as a condition for receiving public financial support. Generally, it has been observed that social-democratic states, particularly in Europe, tend to favor the first approach, in contrast to neo-liberal states like the United States and the United Kingdom.

(Maria Giovannone, L'inclusione lavorativa delle persone con disabilità in Italia Roma, Organizzazione Internazionale del Lavoro, 2022.pag.9)

Disabled workers are one of the most important figures in the Italian labor market that require policymakers' attention. Most people with disabilities have low work intensity, which makes it difficult to participate in the labor market.

In 2021, it was found that only 12 percent of those with a severe disability were employed, compared to 28.9 percent of those with a non-severe disability. Additionally, 48.4 percent of individuals with severe disabilities reported having retired from work, compared to 38.9 percent of those with non-severe disabilities, and 14 percent of those without any disabilities.

According to the ISTAT report "Conoscere il mondo della disabilità" , the public sector has accommodated the majority of people with disabilities, with 49.7% of those employed having severe limitations compared to 41.3% without limitations.

(Maria Giovannone, L'inclusione lavorativa delle persone con disabilità in Italia, Roma, Organizzazione Internazionale del Lavoro, 2022.pag.13)

Going into details, the proportion of employees who can benefit from measures to help them return to work after a long-term sickness absence varies significantly between the EU-28 Member States.

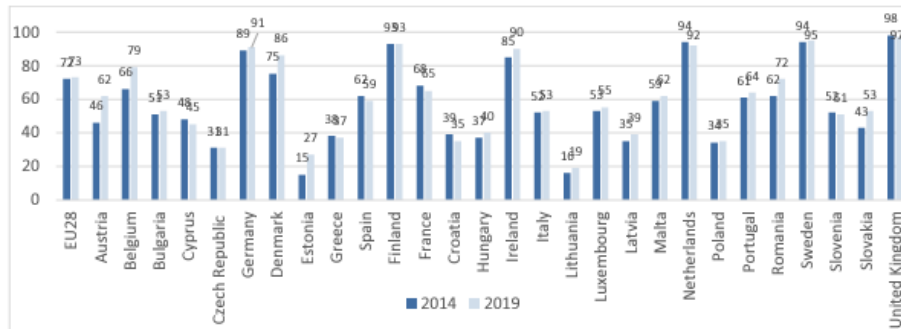


Figure 4: Percentage of employees working in establishments with support measures for employees in place to return to work after a long-term sickness, by country, 2014 and 2019(EU-OSHA)

As shown in the figure, in 2019, a substantial proportion of employees in the United Kingdom (97%), Sweden (95%), Finland (93%), and the Netherlands (92%) work in businesses that give assistance to employees returning to work following long-term sick absence. On the other side, Lithuania (19%) and Estonia (27%), have much lower percentages than the EU-28 average (73%). In Italy, the percentage is close to 50%, which is not, compared to other states, as bad as predictable stating from the trends mentioned above. (European Agency for safety and Health at Work, Work-related MSDs: prevalence, costs and demographics in the EU, 2019, pag. 96)

As highlighted from ISTAT, the public sector has accommodated the majority of people with disabilities, accounting for 49.7% of those employed with severe limitations.

People with more or less severe disabilities are less likely to work in services (27%) compared to the population without disabilities (32.3%) and in industries and manufacturing (16.9% vs. 21.5%).

The analysis based on professional roles revealed a nearly parallel and homogeneous progression between the two groups, with a net benefit on intermediate professional levels and a minor burden on executives or entrepreneurs.

(ISTAT, Conoscere il mondo della disabilità,2019)

Injuries are a cause of concern not only for the health of individual workers, but also for the economic impact on businesses and the social expenses to European nations. Workers with health problems are likely to report that their daily activities are restricted, and they might have to interrupt their job implying an inevitable loss directly linked to the decrease in productivity levels. (European Agency for safety and Health at Work, Work-related MSDs: prevalence, costs and demographics in the EU, 2019, pag. 175)

As stated in a report by Eurofound, while job creation and employee support measures are widely dispersed across all country clusters, policies at the organizational and institutional levels are less evenly distributed. Support for employing organizations receives more policy attention in Nordic nations and liberal welfare states. Policies aimed at enhancing the institutional framework are mostly implemented in Mediterranean countries, continental Europe, and the Nordic countries, while they are almost nonexistent in Eastern Europe and liberal welfare states.

(Eurofound (2021), Disability and labour market integration: Policy trends and support in EU Member States, Publications Office of the European Union, Luxembourg)

Country clusters	Country	Job creation	Employee/ jobseeker level	Organisational level	Institutional level	Total
Continental Europe	Austria	2	1	1	1	5
	Belgium	1	1	1	3	6
	France	2	1	1	1	5
	Germany	1	2	2	1	6
	Luxembourg	1	4	2		7
	Netherlands	1	2	1	2	6
	Bulgaria	1	3	1		5
Eastern Europe	Croatia	2	3	1		6
	Czechia	1	2		2	5
	Estonia		5			5
	Hungary	1	1	2	1	5
	Latvia	2	3	2		7
	Lithuania	3	2			5
	Poland		4	1		5
	Romania	1		1	1	3
	Slovakia	4	1	1		6
	Slovenia	3	3			6
Mediterranean countries	Cyprus	2	2		1	5
	Greece	3	1	1	1	6
	Italy	3		1	1	5
	Malta	3	2		1	6
	Portugal		2	2	1	5
	Spain	1	2		2	5
Nordic countries	Denmark	1	2		2	5
	Finland	2	1	2		5
	Sweden	1	2	4	1	8
Liberal welfare states	Ireland	1		4	1	6
	United Kingdom	1	2	2		5
	Total	44	54	33	23	154

Figure 5: Distribution of policies by country and cluster, Eurofound

The countries are grouped as follows:

- Continental Europe: Austria, Belgium, France, Germany, Luxembourg, the Netherlands
- Eastern Europe: Bulgaria, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia
- Mediterranean countries: Cyprus, Greece, Italy, Malta, Portugal, Spain
- Nordic countries: Denmark, Finland, Sweden
- Liberal welfare states: Ireland, UK

Continental Europe maintains a balanced focus on all policy dimensions, with most countries offering support across the board (except for Luxembourg, which primarily focuses on supporting individuals and employers). This mirrors the situation in Nordic and Mediterranean countries, where there is a higher governmental emphasis on job creation and labor supply. On the other hand, liberal welfare states tend to focus predominantly on assisting employers, while Eastern Europe's policies prioritize job development and labor supply but lack organizational and institutional support.

In 2021, the Inail provided around seven million healthcare services for professional injuries and illnesses, while over 523 million "prime cure" services have been provided through the Institute's 120 ambulatory centers. Furthermore, the Regions' involvement in the development of rehabilitation and integrated services for workers with disabilities has continued.

Thanks to the implementation agreements established with all Regions and the numerous contractual agreements with accredited public and private healthcare facilities, 496,433 additional rehabilitation services were provided to 15,000 beneficiaries in 2021. The total expenditure amounted to 7.9 million euros confirms the significant increase that characterized the healthcare protection provided by Inail to its insured individuals in 2021.

Among the most significant initiatives, in December the Board of Directors approved the Regulation for the provision of interventions aimed at restoring the individual's functional capacity, autonomy, and reintegration into social life. This represents a further step forward in the Institute's ongoing efforts to create a more advanced and effective model for assisting injured workers, with high-quality services. The key innovations introduced include the expansion of the beneficiary pool, now also including individuals injured during the period of temporary total disability and family members for interventions supporting awareness, self-esteem, and autonomy needed to cope with the aftermath of the injury. Additionally, more favorable rules for beneficiaries have been introduced for the renewal of devices and for interventions related to the adaptation and removal of architectural barriers. (Inail, relazione annuale infortuni e malattie professionali-anno 2021)

4 Comparing Disability Management Strategies: Italian and United States Companies

In the modern corporate landscape, companies are increasingly recognizing the importance of Disability Management as an integral part of HR practices. As organizations strive for greater inclusivity, they must develop strategies to effectively support employees with disabilities while ensuring compliance with both national and international legal frameworks.

As mentioned in previous chapters, the different approaches to Disability Management are not solely dictated by different legislative systems, which emphasize different aspects, but also by cultural differences that are reflected in the implementation of the practices under study. This explains why Italian and American Companies, when compared, exhibit different criteria for defining decisions and actions aimed at promoting disability within the corporate context.

4.1 Enel and Microsoft

Enel e Microsoft are the foundations of two distinct national economies, Italy and the United States, respectively. Both companies are recognized for their strong commitment to diversity and inclusion, particularly in supporting individuals with disabilities within their organizations. Regardless of operating in different industries (Enel in the energy sector and Microsoft in technology) their approaches to disability inclusion reflect broader corporate values that prioritize sustainability, innovation, and equal opportunity. Microsoft places significant emphasis on technology as a driver of inclusion while Enel, on the other hand, focuses on tangible initiatives that promote autonomy and accessibility for disabled workers.

Enel's initiatives, such as its involvement in the global Valuable 500 movement and projects like Value4Disability, demonstrate a strong emphasis on fostering autonomy and creating inclusive environments.

On the other hand, Microsoft integrates disability inclusion through cutting-edge technology, assistive tools, and globally aligned policies, ensuring that accessibility and inclusivity are embedded in its corporate culture from the top down.

Enel has been a part of the "Valuable 500" project since 2019, which is a global movement to include disability at the core of corporate agendas and to strongly promote human rights, non-discrimination, equal opportunities, and diversity throughout the Group.

This global initiative aimed at 500 private companies aims to highlight the potential of disabled individuals at the business, social, and economic levels. The Group is working to replace boundaries and obstacles with new opportunities that can capitalize on the talent combination that each individual brings to work.

In each country with disabled workers, a center of attention has been established to address their special needs and launch initiatives to improve autonomy and promote inclusion. This is a specific goal of Enel's Sustainability Plan.

The Group aims to strengthen and expand initiatives related to digital accessibility, autonomy, mobility, development, and employment of people with disabilities.

As Francesco Starace, Enel's CEO, stated: "Disability is a priority area in Enel's approach to diversity, alongside gender, age, nationality, and the promotion of an inclusive culture.

We are participating in the ambitious initiative "Valuable 500" with the goal of releasing the enormous potential that might result in the inclusion of 1.3 billion people with disabilities worldwide." (Enel's official press release, 2022)

Regarding the U.S. company, however June 2023 data indicates that 8.8% of employees within Microsoft's core U.S. operations self-identified as having a disability. This marks a 1 percentage point increase from the previous year, reflecting a positive trend in the company's ongoing efforts to foster an inclusive work environment. This rise suggests that Microsoft's initiatives aimed at supporting employees with disabilities are having a measurable impact, contributing to a more diverse workforce. (Microsoft Global Diversity & Inclusion Report 2023)

Disability at Microsoft awarded eight education scholarships totaling \$160,000 in 2022. This fundraising goes directly to helping close the disability divide by supporting the enrollment of people with disabilities in higher education, creating pathways, and increasing access to careers in technology. (2023 Microsoft Global Diversity & Inclusion Report.)

In fact, the company has developed assistive technologies and accessibility tools that allow employees with disabilities to perform their work more effectively. Additionally, they focus on fostering an inclusive workplace culture through Employee Resource Groups (ERGs) and leadership accountability.

Employee engagement around disability inclusion is a critical metric.

A notable portion of U.S. employees completed an anonymous survey regarding their disability status, though participation in this survey decreased slightly from 36% in 2022 to 34.9% in 2023 highlighting the importance of continuing efforts to promote participation and openness. Moreover, as a U.S.-based company with a global footprint, Microsoft's diversity and inclusion efforts are adapted for different regional contexts.

The American scenario is quite similar to the Italian one, where Enel ,operating in over 30 countries, implements its disability inclusion initiatives in line with its global policy but adapts them to meet the needs of the diverse regulatory environments where it operates.

The company's initiatives, such as the extension of the Pedius app to its international operations, reflect its commitment to ensuring that all employees benefit from its inclusion policies.

Getting more specific, Enel Pedius is a communication tool designed to assist individuals who are deaf or hard of hearing. It uses speech recognition and text-to-speech technology to enable these individuals to make phone calls by converting voice to text and vice versa. Enel adopted Pedius in 2018 as part of its initiatives to promote inclusivity and accessibility, allowing both employees and customers to communicate more effectively.

For example, Enel employees who are deaf can use Pedius to contact internal services like the IT help desk and participate in meetings via platforms like Skype, with real-time transcription provided.

We can then assert that Enel's initiatives are immediate and practical.

Compared to Microsoft, they focus on creating physical and technological accessibility, such as improving digital platforms and offering Braille bills for customers with visual impairments.

On the other hand, the American strategy centers around comprehensive, data-driven reporting to track its progress, allowing the company to measure the effectiveness of its d initiatives through specific metrics, such as representation percentages, survey participation, and feedback from Employee Resource Groups (ERGs) mentioned before.

Despite both companies adopt different methods, Microsoft with its systematic data analysis and Enel with its service-based, tangible outcomes, it seems that they are united by the same overarching goal: creating an inclusive workplace where individuals with disabilities can thrive.

The contrast between Microsoft's focus on long-term, data-backed progress and Enel's emphasis on immediate accessibility improvements reflects the industries they operate in and the resources they have at their disposal.

Microsoft's approach is well-suited to a technology company where innovation and data are core to its business, while Enel's focus on practical interventions aligns with the physical and infrastructural nature of the energy sector. Both recognize the importance of disability inclusion but implement strategies that align with their operational realities.

4.2 FCA Group and Ford Motor Company

Both Ford and FCA play crucial roles in the global automotive industry, driving substantial revenue and job creation while also adapting to shifting market demands and environmental regulations. Their core automotive business has not prevented them from fully dedicating themselves to Disability Management and establishing it as a corporate best practice, considering their strong commitment to creating inclusive workplaces.

For the third time, Ford Motor Company has been named one of the top five companies for diversity by the business magazine and Web site DiversityInc thanks to the programs and in-house organizations that have been designed to bring together employees of similar interests, disabilities and life experiences. (RP news wires, Noria Corporation) Included in those organizations are the 10 Ford Employee Resource Groups (ERGs) worldwide, which not only help to create a pipeline between the company and its employees, but put a special focus on disability with the FEDA organization, (Ford Employees Dealing with Disabilities) that includes not only people with disabilities but family members and coworkers whose goal is to make the public sensitive to the issues of the disability.

Besides sponsoring and promoting special events, FEDA provides range of resources, including networking opportunities, informational tools, and advocacy for workplace accommodations. It acts as a platform where employees can share experiences, receive guidance, and build awareness about disability-related issues in the workplace.

The FEDA research, as well as the group's support of a sales program called Mobility Motoring, which offers customers a reimbursement for specialized medical adaptive equipment, has helped to make the Ford E-Series the number one selling vehicle in the full size van segment. That's why ERGs play a significant role in the company, they are useful to integrate diversity and Disability Management into the corporate fabric. These groups are central to Ford's efforts to engage employees in initiatives related to inclusivity, promoting active participation and fostering a supportive environment for employees with disabilities and their families.

FCA Group is no exception, it has embraced Disability Management within the framework of its corporate social responsibility initiatives as well.

Operating under Law 68/1999, which mandates companies to hire workers with disabilities based on the size of the workforce (as mentioned on the first chapter), FCA has a strong focus on improving workplace conditions through ergonomic interventions. The FCA Group's working conditions have drastically changed with the implementation of the new collective labor agreement (CCSL). (Working Conditions within Italian FCA Group plants- Matteo Gaddi — Fondazione Claudio Sabattini,2020,chapter 13)

FCA implemented the Ergo-UAS system, an ergonomic risk assessment tool integrated with work metrics to reduce workplace strain and increase efficiency. Its aim is to evaluate risks and assign risk levels to various workstations, allowing FCA to monitor ergonomic conditions and make adjustments as needed. UAS, in fact, is a system with predetermined times: each movement constituting the worker's task is assigned a time value.

The time assigned to each workstation is compounded by MTM1 time-value and the ergonomic increase factor.

Ergo-UAS confers workstations a different colour: green, yellow and red.

Each of them, respectively, corresponds to a different risk index:

- 0–25: absent-supervised
- 26–50: average
- over 50: high

(Working Conditions within Italian FCA Group plants- Matteo Gaddi —
Fondazione Claudio Sabattini,2020,chapter 4)

It represents an important step forward, especially if managed with the FCA's World Class Manufacturing (WCM) system, which aims to streamline processes. WCM is designed to handle the unpredictable and fluctuating aspects of both internal and external processes by organizing time in a unique way. This approach minimizes excess on the production floor, converting ergonomic improvements achieved through organizational and technical innovations into higher productivity by better utilizing working time. (Working Conditions within Italian FCA Group plants- Matteo Gaddi — Fondazione Claudio Sabattini,2020,chapter 2)

As highlighted in the previous paragraph focused on Enel and Microsoft, there are clear differences between the Italian approach and the American one.

Key distinction lies in cultural and legislative environments; Italian companies, such as FCA and Enel, are more regulation-focused, driven primarily by compliance with local labor laws.

American firms like Ford and Microsoft, however, are more proactive, integrating diversity and Disability Management deeply into corporate culture. This distinction is reflected in their innovative solutions, such as Microsoft's assistive technologies and Ford's inclusive workplace policies.

Furthermore, the contrast between Italian and American companies is evident in their overall approaches to inclusivity. Italian firms, including FCA and Enel, place a stronger emphasis on complying with local labor laws and meeting regulatory requirements, while American firms like Ford and Microsoft focus on fostering a culture of diversity and inclusivity, often using technology and data-driven strategies.

These differences are not only a product of distinct legislative frameworks but also of divergent corporate cultures, highlighting the varying methods for achieving disability inclusion across different regions and sectors.

5 Conclusion

It has become clear that Disability Management plays a critical role in fostering inclusive work environments, enhancing productivity, and fulfilling legal requirements.

The research began by providing a historical overview of Disability Management, tracing its evolution in the United States, Canada, and Europe, and highlighting key legislative frameworks like the Americans with Disabilities Act (ADA) and Law 68/1999 in Italy. These laws have shaped corporate policies, requiring organizations to implement proactive measures to include workers with disabilities in the workforce. The Canadian and American approaches emphasize inclusivity, while European and Italian approaches are more compliance-driven, focused on legal mandates and regulatory frameworks.

The empirical analysis delved into the economic benefits of Disability Management, examining how ergonomic interventions and inclusive practices reduce workplace injuries, improve employee well-being, and increase overall productivity.

Companies like Microsoft and Ford adopt technology-driven strategies, leveraging assistive technologies and Employee Resource Groups (ERGs) to foster a

culture of inclusion.

By contrast, FCA and Enel focus more on meeting regulatory requirements and improving workplace ergonomics, ensuring compliance with local laws while promoting accessibility through practical solutions like the Pedius app.

By comparing the Disability Management strategies of Italian and American companies, several differences have been revealed . While Italian firms such as Enel and FCA emphasize adherence to labor laws, American firms like Microsoft and Ford take a more integrated approach, embedding inclusivity into their corporate culture and operations. These distinctions reflect the influence of national legislation, cultural norms, and corporate values in shaping how Disability Management is approached in different regions.

To wrap up, Disability Management is not just about complying with regulations; it is a fundamental part of creating a sustainable, innovative, and inclusive workplace. Companies that embrace Disability Management not only fulfill their legal obligations but also benefit from enhanced employee engagement, increased productivity, and a stronger corporate reputation. As businesses continue to adapt to changing global markets, the integration of Disability Management into core business strategies will remain essential for achieving long-term success and fostering an inclusive corporate environment.

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7 Acknowledgements

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