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D8.3 Exploitation Plan for The Whistle & WikiRate

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### Abstract

This document presents ChainReact's consortium strategies and actions relating to the exploitation of the project results, way forward and sustainability through showcasing the value of ChainReact as a concept for current partner organisations/individuals and future prospective ones.

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## Executive Summary

This deliverable explores three major themes around exploitation: 1) What ChainReact is, and the context within which the project operates; 2) The value of the project relative to other offerings and the results being pursued by the project around data aggregation, research and engagement; 3) The sustainability of the project's results including the funding of ongoing work and wider adoption of the outputs of the ChainReact project.

Through covering these aspects of the project and how ChainReact approaches the opportunities and challenges in terms of production of results and exploitation, the deliverable goes on to cover further considerations around project sustainability and considers the future-fitness of the ChainReact project.

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## 1 Introduction

As described in the Executive summary above, this deliverable splits into 3 distinct sections exploring: 1) What the (ChainReact) project is and in what context it operates; 2) The value of the project relative to other offerings and the results being pursued by the project around data aggregation, research and engagement; 3) The sustainability of the project's results including the funding of ongoing work and wider adoption of the outputs of the ChainReact project.

### 1.1 What is ChainReact

ChainReact aims at making supplier networks transparent, understandable, and responsive, and gears towards collaborating with natural mechanisms, institutions and actors to work with challenges around transparency, data and lack of access to data by critical stakeholders. ChainReact has the aim to influence stakeholders and empower work around better performance, and impact of corporations in their supply chains through transparency and generating broader stakeholder awareness. D6.1 and D6.2 covers in depth the challenges and opportunities around stakeholder engagement and also around leveraging siloed and disconnected data both on the indicator level (tracked through WikiRate performance/disclosure metrics), on the relationship level (tracked through WikiRate relationship metrics) and finally on the network level (tracked through emerging network aware metrics).

ChainReact is looking at mechanisms which work with companies existing activities, as well as with existing networks and NGOs in the stakeholder mix, who are delivering information, access to remedy for workers alongside impact in terms of working conditions, and ultimately corporate change. The main stakeholders of ChainReact look to increase the data availability to all stakeholders around dimensions such as supplier transparency, and issues ranging from environmental impact to human rights concerns. ChainReact also looks to work with overarching trends around the Sustainable Development Goals (SDGs) to help generate awareness and bring clarity around what corporations are reporting in line with their overall CSR policies.

ChainReact has reported significant progress in collaboration with several NGOs that seek to improve working conditions within corporate supply chains in the garment and telecom sectors. This report will display some of the results achieved up to this point in the project and describe the actions and steps that will be taken to exploit these - and future - results.

The project is designed in a way that encourages corporate behavioural change by developing an integrated platform that incentivises companies to be more transparent about their supply networks, encouraging them to ask their own supply chain to self-report sustainability data on one of the Consortium Partners' platform: WikiRate.org. The Whistle, a University of Cambridge-based initiative and OpenCorporates each complete the triangle of the struts that, through a systematic integration process of the three platforms, will enable ChainReact to deliver on its overall objectives to identify irresponsible corporate activity through bottom-up reporting (Objective 1), but also through corporate disclosure, to connect issues at corporate networks' edges to network drivers (Objective 2), and to incentivise companies to address network issues (Objective 3).

## 2 Overview of progress in line with ChainReact's objectives

Gearing towards corporate collaboration is a priority for the consortium as recommended by the EC independent review committee during Q7. This recommendation is still in concert with the project's original objectives (Obj. 3: Incentivize companies to address network issues). ChainReact's approach is to connect and amplify the efforts of actors in this space, to try to identify why companies are not disclosing information about their supply networks publicly and to build an open repository where this information can be stored and analysed collaboratively. Updates about the first objective of the project to identify irresponsible corporate activity through its activities or sub-goals have so far been satisfactory: The Whistle platform (sub-goal A) has passed its alpha-phase and has successfully collaborated with a Nigerian Human Rights Organisation to develop a pilot test of a human rights violation reporting app, presently working together to further refine the app to the needs of their reporting contexts. Research with Amnesty International's Digital Verification Corps (DVC) is also underway, this will feed into development of The Whistle's suite of verification tools. As for results regarding the campaigns (sub-goal B), a campaign organised

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with Global Rights Nigeria focused on reporting sexual violations is due to launch imminently.

Where the second objective is concerned, significant results have been achieved in connecting corporate networks by developing relationship mapping through automated processing of official public documents and cross-platform integrations. Details of exploiting these results are highlighted under section 3.1 and present the following tools and functionality:

- Automated mapping upon creation of new companies is now a stable function on WikiRate.org through mapping of OpenCorporates.com entities via headquarters entities, but also automatically importing pertinent information from Wikipedia and the web (Figure 2).
- Successful import of new data on trademarks and beneficial ownership into OpenCorporates.
- Functional Relationship Metrics on WikiRate.org allowing researchers to track details about relationships between companies.

Having said that, partners such as WikiRate and DELab are moving forward with corporate outreach plans (T6.1) and (T6.2) that synergise with (T8.3). This has been possible by improving corporate network mapping and engaging corporations and their stakeholders via disclosure outreach (sub-goal B). Detailed in the submitted D6.2 report, the Amsterdam-based organisation Clean Clothes Campaign are collaborating with WikiRate to share their findings on corporate disclosure of Tier-1 (and occasionally Tier-2) information and to encourage companies to directly engage and share their information on the platform. Further talks with possible stakeholders from the private as well as non-profit sectors to form a Multi-stakeholder action group around disclosures in the Fashion Industry remains viable, and serious plans are developed to find right collaborative outreach to the International Labour Organisation and the World Business Council for Sustainable Development are being considered (T8.4).

ChainReact has been very active throughout the first half of its project lifespan. Passing the project's midpoint line, and as the consortium partners have been preparing and consulting

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with various stakeholders in the field of corporate reporting, significant results can be reported in terms of companies' direct engagement to address network issues. A thorough summary of efforts to this end is submitted in the parallel deliverable D6.2. Some companies are showing interest in involving workers and affected groups directly through reporting functionalities and mechanisms. To that end, the dev team led by Decko Commons deployed network-aware metrics and clarified its definition and functionality.

To give an example on what a network-aware metric is, (as presented in the end of period report): If Company A can answer a "research metric" asking whether it has published a CSR report for a specific year, a "network-aware" metric would aim to capture whether Company A's suppliers have also complied with the same requirement and published its own CSR report for that year. Network-aware metrics are one way to show a company's responsibility towards its own network of suppliers, and towards the community and environment.

Several projects that had gradually started on WikiRate.org a year ago continue to grow and are beginning to catch wide interest and attention; D6.2 details how projects such as the research into Modern Slavery Act reports, managed by The Walk Free Foundation and Corporate Mapping of the SDGs project led by the UNGC initiative PRME generate issue-focused results and impact relevant to ChainReact's focus on mapping corporate performance.

WikiRate is currently performing a competitor market analysis within ChainReact's framework to assess whether there are any tools or services that offer a bottom-up approach to dealing with supply chain data and violation reporting on ESG. The exercise<sup>1</sup> started in Q7 (still ongoing) to identify and assess what cutting edge concepts ChainReact is offering beyond any tool or development provided from existing competing products and services. Some ten organisations and initiatives have so far been researched but none have so far been successful in offering integrative data and reporting or offering the possibility for the wider community (including the most affected or vulnerable groups) to trace data for companies and their suppliers. In addition, the competitor analysis revealed that only two initiatives provide interactive platforms for users to rate companies, their performance, and impact, but

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<sup>1</sup><https://docs.google.com/spreadsheets/d/183MWec0wzb9ZGWWppwkjrcgaBwAISQjVswd6DZXPV4w/edit#gid=0>



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none cover supply chain issues. ChainReact is leading over others in providing the tools to enable researchers, affected groups, and affected communities to fill the data gaps along and throughout supply networks.

The ChainReact consortium looked at the broader competitive environment in some detail in Y1 of the project, with D5.2 looking at network data availability, and D8.1 evaluating the data challenges and opportunities alongside possible engagement challenges. Building on these challenges D6.1 and D6.2 explain the practical steps taken for how to achieve the necessary traction and relationships with stakeholders in order to exert the maximum leverage and impact as a small consortium with simple data production and engagement challenges. The most promising results are coming from multi-stakeholder partnerships which are being built by WikiRate and the Whistle team, to engage with NGOs, the labour force and ultimately companies themselves; around existing published data, which can be shared directly with affected workers and other stakeholders. The partnership with the Clean Clothes Campaign, particularly is an exemplary case of how WikiRate metric data on companies can be shared with important affected stakeholders by leveraging the API of Wikirate.org through a widget, which could potentially facilitate more use cases of a similar type. With the Whistle capacity and use cases building rapidly, we expect that more data can become available for these types of engagements and publications of data direct to affected groups or those that can empower them/ act on their behalf.

The work done with the Modern Slavery Act research and Conflict Minerals research is very helpful in terms of engaging a broader audience in research and understanding around fundamental issues at play and the emerging reporting based on new legislations and targets around labour concerns internationally. Whilst these projects currently only target a growing cohort of students (approx. 2000 engaged so far), WikiRate is building capacity to make such exercises more broadly accessible to a wider public both in terms of research and engagement. This is already well planned for 2018 with research done through WikiRate.org about to be included in the Global Slavery Index for 2018. Similarly WikiRate is working with the UN Global Compact to submit a session for the UN World Data Forum in October 2018. This session complements the dissemination activities of student research on corporate reporting on the SDGs, alongside the aims to cover sets of companies on specific metrics

relevant to UNCTAD, UN Global Compact and wider governmental concerns about how to monitor private sector progress and reporting on SDGs. Such engagement could be vital to promote the wider impact of transparency and corporate understanding around not only supply chain topics, but wider topics which consider performance, and network aware performance and disclosure of companies. Discussions are ongoing about integration of the results of the SDG research pilot for inclusion in the Global Compact's impact report for 2018 with results potentially ready to be presented again at the UN High Level Political Forum on Sustainable Development in 2018. In addition to this, there are ongoing efforts between WikiRate and the UN Global Compact, alongside efforts from the Global Reporting Initiative (GRI) and the United Nations Development Program (UNDP) to aggregate data on companies for presentation to the Corporate Action Group on reporting on the SDGs. Such contact points and potential leverage are important in terms of building to objective 3 around incentivising companies to address issues being presented, in a manner they can understand, through qualified networks.

As the technical work packages continue to build capacity in terms of network engagement (with new metrics, WP5) and data production (with the Whistle campaigns, WP2, WP3, WP4); ongoing work in WP5 and WP6 builds to connect data that already exists in a more meaningful and usable way for more stakeholders to benefit; the results of which will be quite evident in this final year of the project.

### 3 Summary of Results

Although supply network data are being made available by data owners, they remain difficult to access and assess. ChainReact's efforts to bridge the gap between tracking and using data in a meaningful way have been channelled through focusing on the integration efforts of the project's three struts.

The following highlights results achieved by the consortium partners from the beginning of the project to the current



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reporting period (m24):

Keeping momentum in attaining objective 2, and under the focused targets for WP5, the mapping of OpenCorporates.com entities to WikiRate.org companies, and establishing foundations for the work started on corporate network mapping work packages are satisfactorily achieved. This framework is not only functional, it is very relevant to a wider user group looking to map and integration data between two distinct data landscapes. Section 3.1 below provides details on the beyond-state-of-the-art open-source frameworks.

Equally, a significant achievement for this period was the new feature on WikiRate.org called “Relationship Metrics” which can trace relationships between different entities that have been researched. This functionality offers great potential in use and applicability, hence further exploitation; researchers and research groups can use relationship metrics to further connect and map relationships between different entities. For example, a worker may be able to find out which brand his factory supplies to, and thus where the products he/she produces go and who consumes them. Importantly, these connections can also put workers in the supply chain in touch with the policies of the brands they produce, usually a sub-set of these are supposed to apply to supply chain workers. This has great potential to strengthen the bargaining position of workers, by giving them access to the brand’s official version of the requirements that govern workplaces in their supply chain.

### 3.1 Significant achievements beyond state-of-the-art

ChainReact’s attempts to bring forward new methodologies and frameworks in collecting, processing, and collaborating on environmental, social and governance data lie within its new generative dynamic between high-level brand metrics and low-level entity reporting via the integration of WikiRate.org and OpenCorporates. Corporate network mapping across the two platforms was tested and successfully implemented using sophisticated algorithms and processes.

During the testing phase, the produced results over the ground truth dataset were evaluated and validated. The first testing phase did not produce successful results (prediction accuracy was 49.05% during our first attempts), while the achieved prediction accuracy raised to

84.9% during our last experiments<sup>2</sup>. This new framework has already been disseminated as open source on GitHub<sup>3</sup>.

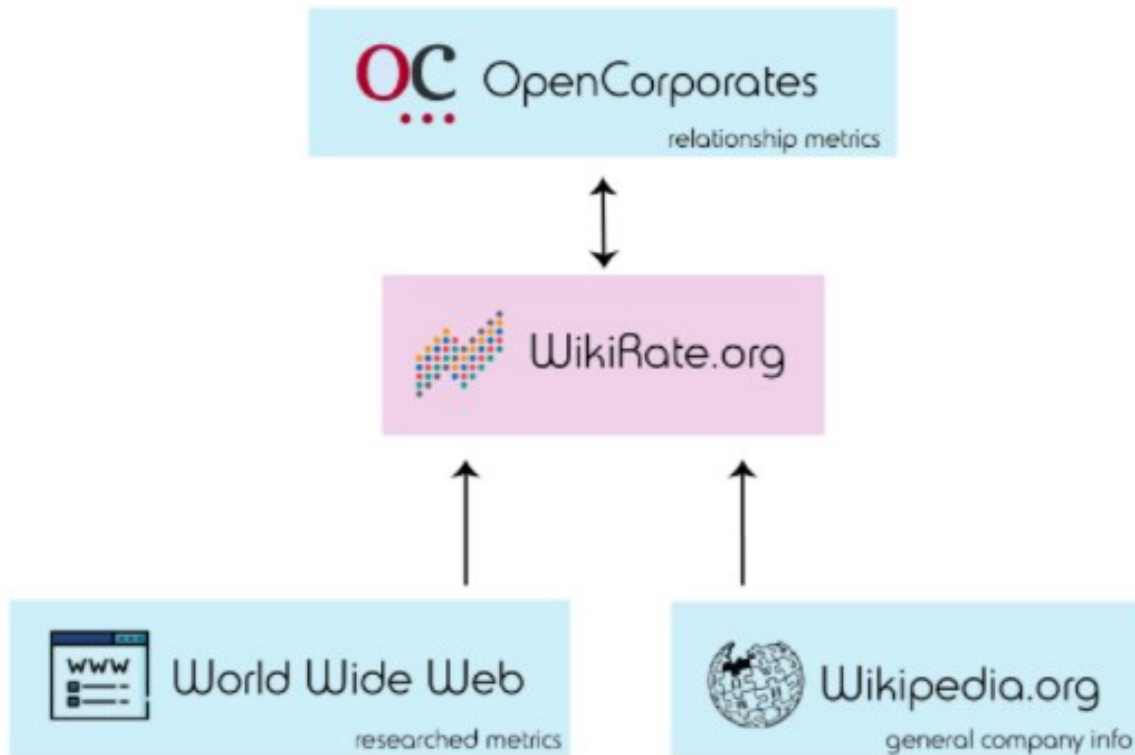


Figure 2 Integration of WikiRate.org, OpenCorporates and other sources

Furthermore with regards to publishing the data collection framework, another integration mechanism was developed, tested, and published to complement and complete the strut integration plans: The Company-Data integration framework, developed by CERTH to ease the flow of corporate data between WikiRate and OpenCorporates (see Figure 2) has also been made available through GitHub<sup>4</sup>.

The Whistle seeks to advance the state of the art in reporting and verification by departing from the usual models of software development. The Whistle puts qualitative research at the heart of this process, working closely with NGO partners to understand how they operate in the space and what the barriers are to improving their effectiveness. The benefits of this

<sup>2</sup> Reference Q5 periodic report.

<sup>3</sup> <https://github.com/MKLab-ITI/easIE/tree/master/src/main/java/certh/iti/mklab/easie>

<sup>4</sup> <https://github.com/MKLab-ITI/company-data-integration>

approach are two-fold: 1) software that is crafted to serve particular use-cases well, and 2) research outputs that illuminate the underlying issues and practices.

### 3.2 Generated knowledge and benefits reach

ChainReact's structure for strut integration is designed not only to secure data flow between the three entities, but also to offer knowledge and build capacity to those using it. Within this framework, WikiRate developed its network structure to handle relationship data, The Whistle is being designed to handle violation reports using direct approaches and offering advice to how the tools could be used to minimise privacy breaches, and the integration between WikiRate and OpenCorporates is already showing positive results in terms of automatic entity matching and relationship data.

On the topic of open data, open knowledge, and corporations, one article has already been published and one is scheduled to be published soon:

1. Vasiliki Gkatziaki, Symeon Papadopoulos, Sotiris Diplaris, and Ioannis Kompatsiaris. "Large-Scale Open Corporate Data Collection and Analysis as an Enabler of Corporate Social Responsibility Research." In *International Conference on Internet Science*, pp. 266-280. Springer, Cham, 2017.
2. Vasiliki Gkatziaki, Symeon Papadopoulos, Richard Mills, Sotiris Diplaris, Ioannis Tsampoulatidis, Ioannis Kompatsiaris. "easIE: easy-to-use Information Extraction for constructing CSR databases from the Web.", *ACM Transactions on Internet Technology, Special Section on Computational Ethics and Accountability*, (accepted for publication 2018).

ChainReact's deliverables and current publications have been disseminated through the project's website: <http://chainreact.org/Results>.<sup>5</sup> Further dissemination to increase impact of the new technologies, strut integration and exploitation of data has been conducted through conference attendance at the UN Forum on Business & Human Rights in Geneva, Switzerland, in concert with dissemination to partners interested in applying new

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<sup>5</sup> Further on exploitation, this project does not have any Registered Intellectual Property Right yet.

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technologies to increase knowledge base. Workshops and trainings to partners and volunteers are also being considered as approaches to scaling uptake.

### 3.2.1 Knowledge generated by The Whistle

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The Whistle team brings a unique perspective to software development, considering this from a variety of angles. The team brings together people from a variety of social science research and software development backgrounds, these social science disciplines with their associated literatures and methodologies bring valuable perspectives to the task of designing software for the human rights space which can make a difference to the lives of its users. Software design and development is also explored as a sociological research methodology itself, and a manuscript on this subject is being prepared for submission for publication.

The research-oriented approach of the Whistle team can also be leveraged through an advisory role in relation to other projects. Three members of the Whistle team were recently invited to attend the U.N.'s OCHR Expert Meeting on the Authentication and Classification of Digital Images. Through participation in meetings such as these, and sustained dialogue with other projects in the space, the insights gleaned from research conducted for ChainReact can percolate to other projects that do not have the same grounding in academic research. These exchanges also benefit the Whistle team, ensuring awareness of cutting edge developments and other projects, so that the Whistle can continue to carve out its own niche and find ways to collaborate with similar projects rather than compete.

The Whistle can in some sense serve as a "living laboratory" for human rights reporting, where the sociological dimension of this is emphasised and solid academic research is prioritised. Insights gleaned from working closely in an agile way with dedicated partners can then feed back into the space more broadly through publications, presentations and advice to other projects.

The following is a list of planned research outputs from the Whistle part of the ChainReact project.

- 1) No Tech, Low Tech, Slow Tech: Human Rights Practitioners' Resistance to ICT4HR;
- 2) The Medium is the Method: App Design as a Sociological Research Methodology, an examination of the methodological value of app production to the social sciences, particularly in the context of development work; and
- 3) Untitled, in the fieldwork phase, that examines how independent student verification groups associated with Amnesty International's Digital Verification Corps understand truth, credibility and 'fake news', and how these views and understandings are reflected in their digital verification processes and workflows (with the goal as ever in mind of developing helpful software to facilitate these workflows).
- 4) In addition to these three papers, a series of between 5 and 10 more papers are planned, including up to 7 case studies contextualising partner launches with The Whistle; a follow-up to The Medium is the Method summarising best practices and learnings from the collective case studies; a theoretical paper examining in more depth fears about reciprocity, extractiveness and trust (a key theme in research conducted with NGOs on barriers to technology use); and an empirical comparison of students' understandings of truth and verification prior to and after the DVC's verification training, in order to understand the impact of verification tools on perceptions of truth and credibility.

As mentioned, these results can be extended to academics and researchers, and to advocacy and policy actors as well. However, The Whistle, especially with ChainReact's broader integration plans, aims at extending its use and benefits to users who are found on the deeper levels of the chain: starting with tier-1 supplier, rippling down to factory employers and most important, workers and their communities.

### 3.2.2 Knowledge generated by WikiRate (and WikiRate-OpenCorporates)

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Integrating WikiRate and OpenCorporates created a data landscape that is poised for scale. The created synergy not only provides a wealth of relevant ESG data on corporate performance, research and data extraction methods are beneficial for a wide range of actors. CERTH's design and development of tools that specifically tackle the issue of data non-extractability from reports via open-source solutions such as the tools mentioned in section

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3.1 but also through developing the PDF table extractor tool <http://easie.iti.gr/pdf-tables/> that facilitates the process of extracting data from corporate sustainability reports and exporting them onto WikiRate.org. In addition, the exercise that involved the mapping of “legal entities” from OpenCorporates to Wikirate.org continues to be implemented. The near roll-out of industry metrics and network-aware metrics have significantly boosted the broader ChainReact value proposition in that industry metrics will provide a better data structure that can be filtered and linked and provide better data that can be translated into consumable knowledge. With that in mind, the mechanism for linking and extrapolating Industry data will be represented in various metrics, ranging from designer-assessed researcher metrics to formula metrics and even hybrid metrics to enable crowdsourced research. The need for metric variations is directly linked to the data ecosystem in relation to ChainReact. This variation opens up the exploitation of results to multiple stakeholders in the field to include: companies, NGOs, researchers, students, academics, workers, vulnerable communities and the wider public.

Whether manually researched or imported through OpenCorporates’ integration, companies existing on WikiRate.org will soon be connected to a relevant industry. This will allow for easier connections and exploitation of data from multiple open sources and will create one common open industry classification. For example, a company representative would be able to search for /filter metrics that are important or relevant to its industry in order to select or research metrics that are material to their own line of work /industry. What is also important is that these metrics will provide workers and other vulnerable groups with the tools to also filter and research information that are relevant to the industry they work in.

The need to develop network-aware metrics is based on the fact that companies’ social and environmental impacts should be measured not solely by the individual company’s acts and independently of its surrounding, but actually through its network and dependencies. WikiRate’s calculated metrics will be able formulaically combine standard metric answers with relationship metric answers to generate “network-aware” ratings and other valuable performance measures.



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Further down the line two other types of metrics will be introduced: Hybrid and descendent metrics. Hybrid metrics are especially relevant to the ChainReact context in that they will allow all users and researchers to use restricted metrics that are designer-specific. The main goal of hybrid metrics is to remove as much barriers as possible to community extension and refinement of existing metrics, and to encourage collective research and awareness. As for descendant metrics, they will follow a pattern similar to calculated metrics, designed to fill in data gaps that can be available to other users.

### 3.3 Other exploitable activities

#### 3.3.1 WikiRate-led campaigns

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WikiRate is responsible for carrying out two types of campaigns: ‘Data Drivers’ and collective awareness campaigns. As part of and in connection to WP6 (see D6.2), the first type of campaign focuses on soliciting new disclosure around corporate networks. Building toward this target, the WikiRate and DELab teams have been in conversation with several company representatives discussing possible forms of direct engagement with the WikiRate platform, as well as the barriers to such engagement. Understanding what data is internally available to corporations, what hesitations exist with regards to disclosing all that information, as well as what data gaps that exist in their databases, help us clearly articulate the collaborative role of WikiRate in driving further supply chain transparency. Moreover, aware and respectful of the longstanding advocacy work that is ongoing between civil society and the private sector, WikiRate is also working closely with large international advocacy groups like the Transparency Coalition.<sup>6</sup> By advising them on their task of companies and bringing the newly disclosed data sets onto the WikiRate platform, we assist them in pushing the transparency and disclosure norm to the next level.

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<sup>6</sup> Consists of Clean Clothes Campaign, Human Rights Watch, IndustriALL, ICAR, International Labour Rights Forum, International Trade Union Confederation, the Maquila Solidarity Network, UNI Global Union, and the Worker Rights Consortium.

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Furthermore, once Relationship and Network-aware Metrics are rolled-out and accessible on WikiRate.org the ‘Data Drivers’ will pick up pace. By connecting and analysing the supply chain data on WikiRate.org with these mechanisms, it will be possible to demonstrate the potential impact of further disclosure and transparency. As such, this innovative way of utilizing corporate disclosure will provide additional pressure points for promoting company disclosure.

The second type of campaign is connected to WP8 and is aimed at generating collective awareness. These campaigns are designed to include a wider public and engage individuals through crowd research. By making the data collection and analysis accessible, it is possible to engage individuals who have little to no prior knowledge on the topics of research. By guiding individuals through the research, step by step, their knowledge of the issue areas develops and their understanding of company disclosure and due diligence deepens. Ultimately this results in a more informed public. Exemplary projects include the Principles for Responsible Management Education Initiative (PRME) project with more than 1,350 students and 11 universities involved, and the Modern Slavery Act project led by the Walk Free Foundation, also involving a number of universities and researchers. These projects stress the importance of corporate disclosure, regarding their progress towards the realisation and success of the SDGs, and relating to due diligence around issues of modern slavery (respectively). The success, continuation, and scale of these projects provide context for conceptualising WikiRate-led collective-awareness campaigns.

In addition to engaging a wider public in crowd-research, the WikiRate team is also building capacity to promote collective awareness through targeted dissemination of specific data sets. As briefly touched upon (Section 2), the “widget” that is under development in collaboration with Clean Clothes Campaign is a key example of such a project. In essence the project is developing a search engine for supply chain workers that enables them to determine which brands they are producing for, simply by entering the (partial) name or address of the facility at which they work. With the potential to pull more data into this “widget”, it is possible to then also inform workers about the supply chain policies of these brands, which indicate the labour standards that should apply to their working conditions. While this project does not engage the audience in collecting or analysing corporate network data, it does promote

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awareness by disseminating the information that is available and thus empowering those who could benefit from that information.

Alongside the preparation of these 'Data Drivers' and collective awareness campaigns, internal and external partner meetings were held to strategize capturing feedback from stakeholders involved. A strategy document is currently being formulated on how to methodologically collect user feedback specific to each type of campaign, as well as how to analyse and integrate the feedback provided.

### 3.3.2 The Whistle-led campaigns

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The first Whistle reporting campaign, in partnership with Global Rights Nigeria, is poised to launch in mid-February. This campaign involves soliciting reports about instances of sexual assault, these are woven into the "Rape is a crime" campaign ([rapeisacrime.org](http://rapeisacrime.org)) which will use reports to build a more accurate picture of the nature and scale of the problem in Nigeria, while also mobilising participants to "Speak, Report, Support, for a Nieria without sexual abuse". The development of the reporting system and the campaign surrounding this has been a collaboration between Global Rights Nigeria, the Whistle team, a student group at the ESCP business school, and several independent artists – this is described in more detail in the Q8 progress report for WP4.

Although it has been difficult to find NGO partners willing to take on the role of running company-relevant reporting campaigns *and openly publishing results that can be used as WikiRate sources* (see D6.2), several ways of mitigating the barriers in this regard are being explored and we are confident that two pilot reporting campaigns that produce company-relevant data can be achieved within the project's final year.

It is also encouraging that the reporting system and dashboard developed for GRN is of interest to other organisations and could potentially be used by them for similar purposes with only cosmetic alterations. We are in discussion with one human rights NGO that would like to field test the Whistle as a replacement for their current report collection and analysis system, and after the launch of the GRN campaign this could move forward to testing quite quickly. While this use case wouldn't produce publishable data about companies, it could

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help to establish the Whistle as a credible platform for reporting and verification and the benefit of another closely monitored field test would be great.

The Whistle was a fresh project with a fresh team at the start of the project term, and building the reputation of the product and team has been important. Other key partners like WikiRate and OpenCorporates started the project in a much more developed state in this regard. This is going very well for the Whistle, and gives additional outlets through which the Whistle can have a positive impact.

It is also worth mentioning the close relationship between the Whistle and the Cambridge branch of the DVC. While not a reporting campaign as such, this work to understand and facilitate volunteer-driven verification of reports will be of great benefit to the project and the space. The benefits of the research will be long-term and accrue over time, but the Cambridge DVC is itself already delivering real value to Amnesty International and their affiliated partners. Interviews were conducted by a team representing both entities (The Whistle and DVC) to collect information from organisers and participants on how The Whistle can serve this use case on collecting and verifying open data. As reported in the end-of-period report (M18), this partnership is proving its value not only because the DVC represents a significant development in the verification of human rights violations (with the first branches working well and great potential to scale) but because being able to connect a reporting campaign directly to the DVC's verification workflow as part of the monitoring function of Amnesty International will strengthen The Whistle's offer to prospective partner NGOs. Furthermore, by servicing this particular partnership, The Whistle will be better positioned to develop its "Verification Engine" part of its product, by contextualising it in a verification work-heavy environment.

## 4 Exploitation activities

At the core of all executed and planned activities for ChainReact lies the goal of delivering and exploiting impactful activities that are beneficial on the social and collective spectra. With that in mind, plans to address exploitation of ChainReact’s results are defined to include the project’s technological innovation potential including the strut integration, analysis of these innovation tools producing social impact, and how they are evaluated. Part of the plan is to examine how these results can maintain their impact, reach, and possible scale beyond the project’s lifespan in presenting plans around results scale and sustainability.

### 4.1 Integration

The first phase of the WikiRate-OpenCorporates integration saw Decko Commons working with CERTH’s corporate mappings and OpenCorporate’s web API to upgrade WikiRate.org company pages with live OpenCorporates “widgets”. The process is semi-automated for the time being, so for example, when a researcher creates a company page on WikiRate.org and fills out the relevant company name/logo, headquarters, and Wikipedia company name (not link) on the page, the headquarters text box integrates and imports information from OpenCorporates (so does Wikipedia integration) as in the figure below:

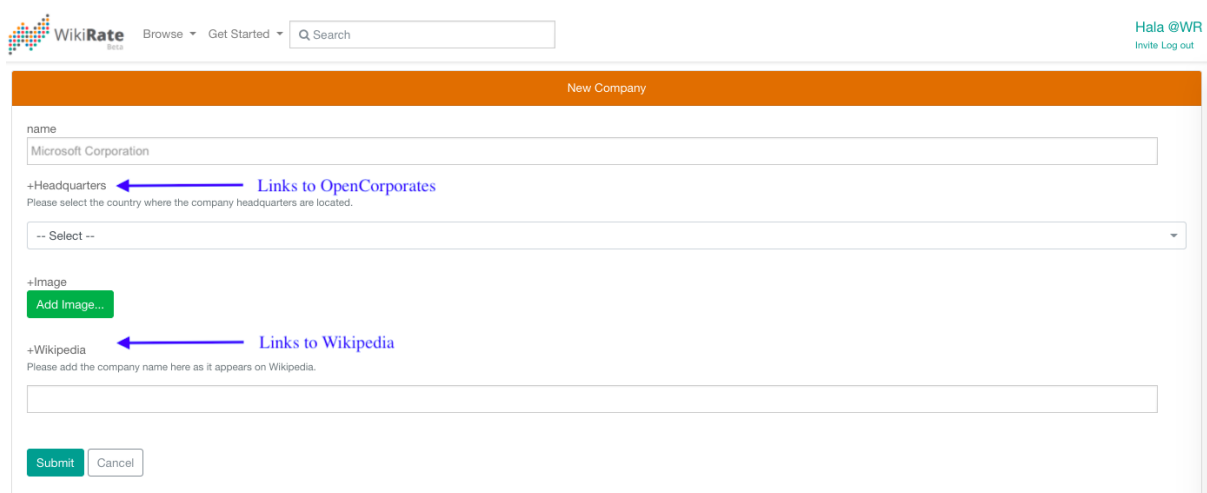


Figure 3 WikiRate, OpenCorporates and Wikipedia integration on company creation page

After submit:

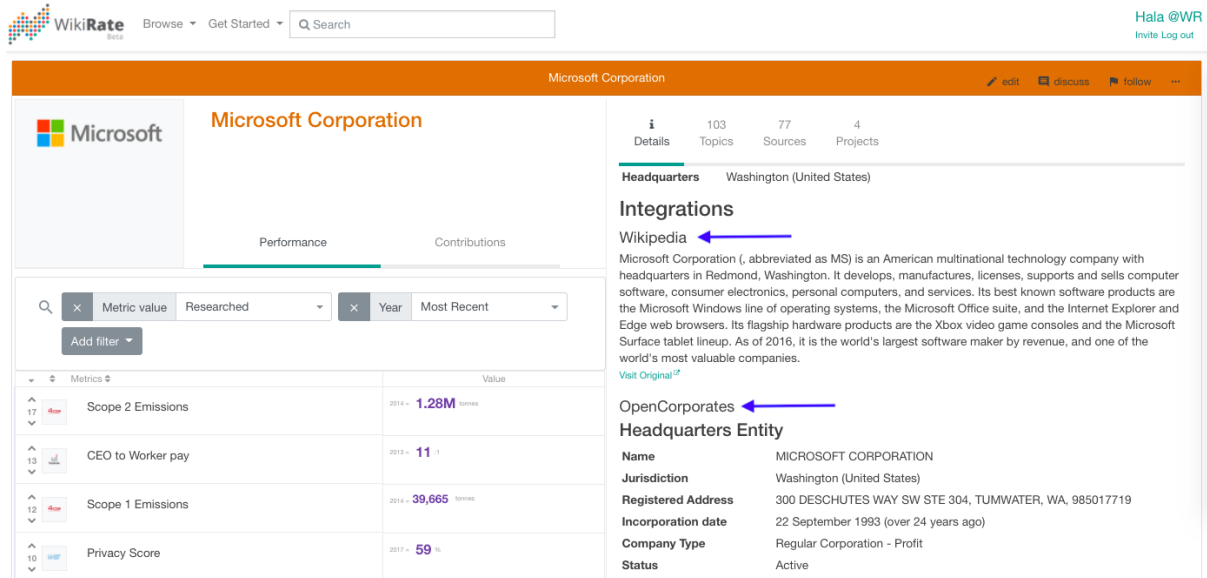


Figure 4 WikiRate, OpenCorporates and Wikipedia integration on company profile page

Both sections on the company page (Wikipedia and OpenCorporates) have integrated automatically after pressing submit. This remains a complex process with some challenges as to how a company is represented on OpenCorporates database, but as future phases plan to tackle more accurate integration mechanisms, the results of combining and integrating open-data on one platform are significant and offers users and researchers more information and synergies.

Furthermore, upcoming integrations will also include data relevant to industry, networks, and trademarks as Figure 5 indicates making it possible for yet another layer of relationships to be mapped and integrated via the developed tools:

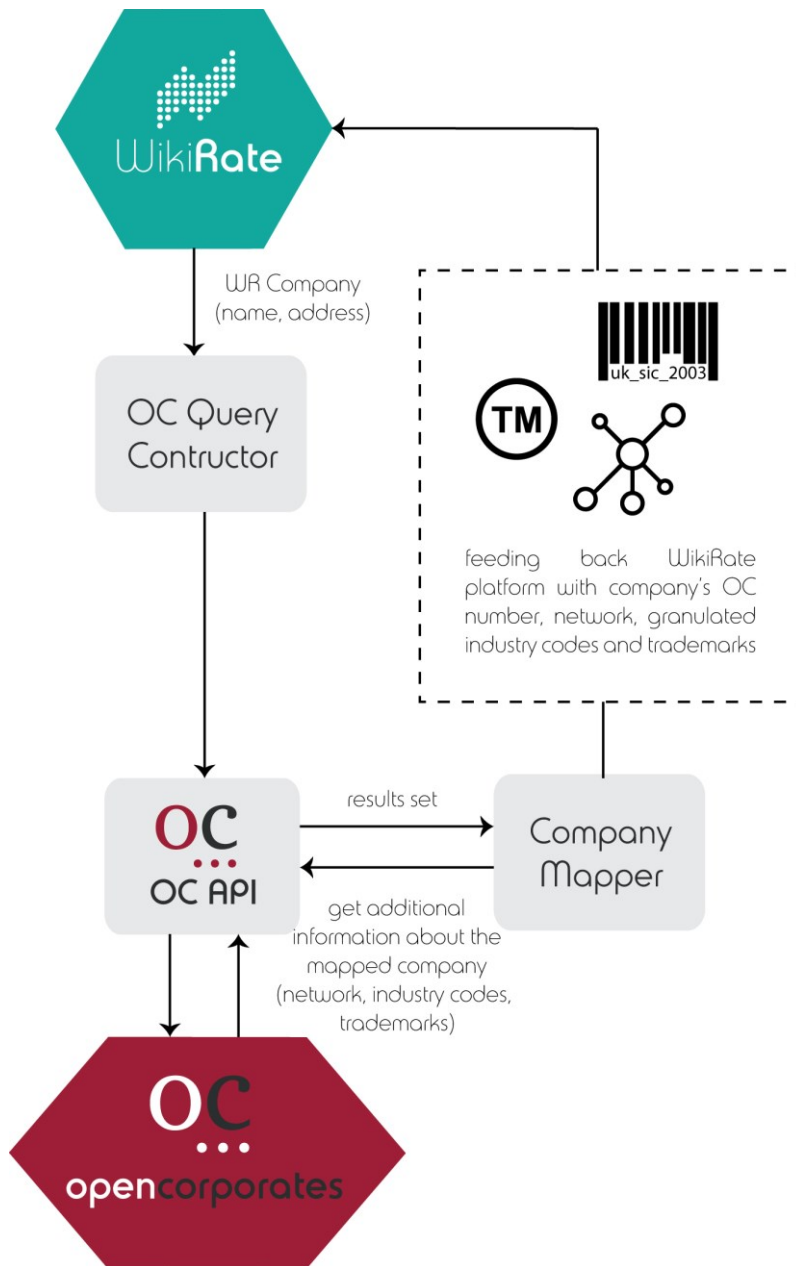


Figure 5 Future integration dynamic between WikiRate and OpenCorporates

#### 4.2 Data management: data collected and generated

ChainReact’s open-source policy is foundational to its success. The integration of the three struts will allow for collected or generated data to be exploited or made accessible for verification and re-use. Open data management with regards to The Whistle remains a challenge due to the sensitivity in data collection and reporting, and the concerns participants voice regarding anonymity. It is important to clearly differentiate between different types of

data in relation to the Whistle. The most important type is report data, representations of incoming reports. This data is managed by the partner NGO(s) running the reporting campaign, they decide where it is stored and who has access to that store. Where desired, the Whistle can set up this storage, and the Whistle may ask for access to some aspects of the data for research purposes, to better understand the use of the product and improve it. However, in principle the partner NGO controls report data. This is true also for "meta-data" about the reports generated on the Whistle dashboard, I.e. notes about reports, categorisations, assignments, verification decisions. Again the partner NGO decides who has access to read and write to this data.

The Whistle will also offer tools to export or publish data from the dashboard, it is through this mechanism that the Whistle will produce open data. The idealised view of this as outlined in the DoA is that a given campaign is created with a set of rules for what to publish (e.g. aggregate number or proportion of reports that match certain criteria) and when (e.g. when the reports are verified they are added to the aggregate). The main destination of these outputs is envisioned to be WikiRate, where aggregate data about companies could be made available for use as sources and/or metric values and be updated live as new reports come in and are verified. The first two years of the project have given us a more nuanced understanding of how data publication from the Whistle should work and what purpose it should serve.

Firstly, the decision to publish data from the Whistle is likely best not automated but made by a human, with more control over the specifics. There is a demand for data export/publication facilities which are flexible. For example, in the context of verification, it may be desirable to publish data on the checks which were performed for a particular report while obfuscating the identity of the checker and within-group discussion. Equally, one must be careful that a method of aggregation does not unwittingly expose reporters, by for example showing that a report was made by an employee of a company that only has a few employees in total - human curation is important in this regard also. Secondly, WikiRate is not the only venue where report data can be published, depending on the campaign it may not even be the predominant venue. Partner NGOs should have the freedom to publish aggregate data from the Whistle on their own platforms under their own terms.



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As the project develops it has become clear that although the link between the Whistle and WikiRate is important it should not be given undue consideration. The Whistle will benefit from the capacity to output aggregate data in a standard form that could be integrated in a number of venues – just as WikiRate will benefit from being able to receive data based on grassroots reporting from a number of sources. This integration should be developed with APIs that are somewhat standardised and general-purpose, using the Whistle-WikiRate pathway as an example of one possibility, not the only possibility.

For OpenCorporates, being the largest open database of companies and company data in the world, its aim is to ultimately make information about companies more accessible, more discoverable, and more usable, and thus give citizens, community groups, journalists, other companies, and society as a whole the ability to understand, monitor and regulate them. This mission fits well ChainReact's strategic shift in terms of strut development and integration; with WikiRate now able to offer users research options using relationship metrics, The Whistle working with partners to handle violation reports and data verification, and OpenCorporates facilitating the streaming between WikiRate's and their database (WP5 – CERTH import tools).

WikiRate is expanding its user base to include directly affected users along the chain, which includes both workers and company representatives. NGOs, academics, and students are still very active in researching and generating open data that is relevant to ChainReact's data ecosystem, including data from initiatives and ground-level organisations working directly with factory workers and labour associations such as Clean Clothes Campaign and Fair Labour Association. These partnerships are generating more openly accessible data than ever before on factory performance and other actors along the supply chain.

Industry-related data provided by organisations vary naturally. Some organisations deal with corporate representatives and provide high-level data on companies and their tier-1 and tier-2 suppliers (CCC), whereas others go deeper down the chain, provide open-data for use, but the data remains anonymised (FLA). This issue touches on some of the concerns about privacy and protection which need to be considered when opening data up to map the whole chain. Solutions that are being assessed now are still considering fully anonymity but can be linked

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to industry-specific metrics, and possibly to get-tagging metrics. This way, a user can research or relate according to industry or location.

For that, and part of exploiting these datasets, WikiRate will continue working with action groups (WP6) and (WP8) and will continue to carry out its targeted campaigns with the aim to fill data gaps both in terms of media and consumer driven campaigns; and through top down disclosure campaigns, which are now driven through a more collaborative model of engagement, including industry initiatives, multi-stakeholder representatives and corporations. WikiRate can leverage benefit from some of its collaborations and memberships with stakeholders such as the United Nations' Global Compact (UNGC) Multi Stakeholder Advisory Committee (MAC) to the Corporate Action Group (CAG) around corporate reporting on the sustainable development goals (SDGs) towards the 2030 agenda for sustainable development.

With the continued work on WP6, specifically (T6.2) and (T6.3), the tasks focus on building relationships with companies and incentivising them to share and seek their data as well as data from within their industry or competitors. It is the consortium's hope and belief that growing these corporate relationships, although gradual, will yield positive and optimum results in making more data available and transparent.

D6.2 outlines in more detail the progress to date and the next steps towards corporate engagement both around the apparel sector, but also in the wider framework of the corporate network engagement through relationships with Global Reporting Initiative (GRI) and UN Global Compact and the associated joint work.

#### 4.3 Exploitation of project's social impact

To date, ChainReact's research aspect has brought multiple stakeholders into the mix. These stakeholders are concerned with filling gaps for ambiguous or difficult to access supply chain data. The phased strut integration plan has also impacted the way researchers and the wider community can access and process information, and this is but step one of a more complex, more sophisticated outcome. The ultimate aim for harmonising methodologies that ensure

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integration and seamless data flow is to facilitate citizen reporting that can be mapped across corporate official disclosures.

ChainReact's The Whistle aims to connect civilian witness reporters directly to relevant NGOs. Its current design includes a dashboard, which facilitates handling and verification of reports by NGO representatives. The WikiRate-OpenCorporates mapping and integration exercises required the development of open-source technological innovations that have proven their viability and can be useful and utilised beyond ChainReact. Bridging the gap between official corporate disclosure and aggregation of that disclosure, CERTH's scraping and PDF extractor tools are drawing interest from community and coalition partners to facilitate further openness and connectivity between data. The introduction of relationship, industry, network, descendent, and hybrid metrics are all but useful tools to exploit ChainReact datasets beyond the project's set objectives.

Progress reports submitted by the partners, whether in the shape of deliverables, or through periodic reporting has stressed on expected results beyond the state of the art and their potential impacts (including the socio-economic impact and the wider societal implications of the project).

Since the mid-term review in Volos (M18), ChainReact collaborated with another European Commission (ChiC) consortium to evaluate a framework for assessing the project's impact criteria building on the opportunities and challenges. In light of the current work package, and the work carried out under (T7.2) which involves developing a set of SMART targets that weighs external affecting project's results impact alongside achievement of objectives. The ChiC IA4SI consortium collects and analyses information about CAPS projects activities, results, and most importantly processes in order to map and distil impact and good practices. During the conversations with the project, ideas were exchanged around supporting and exploiting results from current and future initiatives in the field of Digital Social Innovation by learning from CAPS successful experiences, around projects' socio-technical outputs, and most notable around dissemination and exploitation of projects' results in order to support further recognition and uptake of these results.

This value proposition makes ChainReact a project with potential to strike high impact for various stakeholders and with results that could be exploited, reused and adapted, notably with the developed relationship metrics and widespread accessibility of the tools and features delivered by this project. Offering the possibility for the wider community to trace data for companies and their suppliers, i.e. tier-1 suppliers, strikes for an impactful proposition that reflects major societal implications. There are several primary stakeholders to the project that can be described as drivers for impact in ChainReact: Corporations, Academics and students, NGOs and volunteers are vital for causing wider reach through collective awareness both in an educational capacity, but also through a broader diverse community. Already through WikiRate.org, there is progress towards engagement of the primary stakeholders of ChainReact, through existing collaborative work, conferences and existing projects such as the Modern Slavery Act research, the collaboration with the UNGC, PRME, and others around reporting on the United Nations Sustainable Development Goals (SDGs). ChainReact is well on track in providing the tools to enable researchers and the wider research network to fill the data gaps that are currently causing hindrance to reaching set targets towards the 2030 Agenda for Sustainable Development.

Several projects using WikiRate.org have succeeded in generating increased interest from other stakeholders. The impact generated through projects like The Walk Free Foundation's Modern Slavery Act research, and the PRME corporate advancement to the SDGs is reaching legislative bodies and governments. Project ideation has already taken shape between WikiRate and one governmental actor interested in exploring private sector disclosures in their jurisdiction using the WikiRate toolset, and such analysis can be enriched through the sort of data that can be extracted through the ChainReact project.

#### 4.4 Evaluation in line with WP7

In order to achieve the desired reach and exploitation for ChainReact's results, it is necessary that all work packages are aligned and connected. What is also important is that leads on WP7 and WP8 are managing outputs of these packages in unison. To that end, project monitoring mechanisms have been very effective so far in assessing the progress of ChainReact's impact on the social and research fronts, including periodic monitoring of

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SMART targets in line specific to work packages, but also indicators that are cross-functional.

The mechanisms for monitoring the progress of exploitation activities and assessing their effects are following:

- The SMART Targets related to WP8, organising the structure of exploitation activities, are the primary means of managing and monitoring the progress towards reaching W8 exploitation goals. This mechanism is already in place and regularly monitored and evolved.
- The quantitative evaluation of KPI's will allow to assess the effectiveness and impact of exploitation phase. The tools for this evaluation are being derived partially from the methodology developed in CAPS IA4SI project (and currently used in impact evaluation of CAPS projects, including ChainReact).
- The qualitative aspects of evaluation of exploitation efforts, carried out by interviewing ChainReact key team members, will deepen the insights and provided narrative context to the evaluation of WP8.

#### 4.5 Sustainability of the project's results

WikiRate is organised quite tightly around budget constraints for ChainReact, and is looking at models of sustaining the project beyond the funded term. The approach being taken here includes looking for potential sponsorship of active engagement projects (e.g. SDG research, Modern Slavery Act) by capital coming from the private sector, and through further research grants building on the existing work towards clear impact and engagement criteria in association with established partners. WikiRate has developed its relationship with PRME and the UN Global Compact, and is looking at joint fundraising possibilities for their joint work, possibly from building on the outcomes of dialogue with the Corporate Action Group on sustainable reporting. Additionally there is broad interest in the work being pursued around fashion transparency with organisations like Fashion for Good and the C&A Foundation interested in funding projects in this area. WikiRate and the Whistle also put in a joint bid for a call from the European Instrument for Democracy and Human Rights

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(EIDHR). Building on the impact generated from Relationship Metrics and open data integration proof-of-concepts, WikiRate has been included in partner bids as a research and dissemination tool for connecting brands and their performance/ policy data to workers. WikiRate and the Whistle will also continue to pursue grant funding for calls which support their individual and joint efforts and needs.

Furthermore, WikiRate has undergone a major strategic evaluation culminating in changes which will help the organisation optimise to both deliver on ChainReact and secure sustainable financing going forward. Great emphasis has been placed on management and maintenance of research and engagement with a view to building to impact and further funding to support the ongoing exploitation of results.

The Whistle team are also exploring ways to fund future maintenance and development of the product while keeping it free to use for NGOs. In the immediate future grant funding seems like the best prospect, but there is also potential for well-resources organisations that benefit most from the Whistle to pay for its maintenance and tailoring, subsidising it for smaller organisations.

Ultimately ChainReact's wider sustainability will rely on perception of value from external actors. For this reason ongoing work in D6.2 is critical to helping the work from the ChainReact partners to get noticed and utilised in order to support objectives of wider stakeholders around dissemination, research and engagement. With the adoption of the Modern Slavery research to be used in the Global Slavery Index publication, ongoing conversations to integrate SDG research work into the UN Global Compact's impact report and the promising applications of the widget requested and in development for the Clean Clothes campaign, the third year of the project will start positively towards exploitation of results, but also towards ensuring sustainability of the project results in the future.

## 5 Summary

The exploitation plan for ChainReact has a number of facets, it is worth considering the set of challenges the project is addressing again and breaking these down to consider how each can be pursued going forward under varied scenarios.

“**ChainReact** is an effort to make supplier networks transparent, understandable, and responsive, so that companies and their stakeholders can see, react to, and ultimately transform corporate network impacts.”

To achieve this aim, information about companies supplier networks should be publicly *available, useful* and *used*.

**Information about companies’ supplier networks should be *publicly available*.**

Some sectors, like fashion, are demonstrating significant progress in disclosing their suppliers, in particular tier 1 suppliers. This is a good first step, which will hopefully pave the way for companies in other sectors to disclose similar information. Progress remains to be made on disclosures further down the supply chain, both in terms of relationships (where do suppliers obtain raw materials? do they use subcontracting?) and, more pressingly, in relation to the social and environmental performance of suppliers – about which very little is knowable by the public. It is primarily in this capacity that the Whistle is intended to contribute to the ChainReact ecosystem, but this is just a small piece of the puzzle, a kind of stop-gap measure to address a gaping hole in data availability. To address pressing social and economic issues on the timescale required to meet the UN’s 2030 agenda for sustainable development, a more general sea-change in the attitude towards disclosure is required.

**Information about companies’ supplier networks should be *useful*.**

For a relatively small project, relatively early in its lifespan, moving the goalposts of corporate disclosure is an ambitious aim. As a stepping stone, ChainReact aims to make the data that *is* publicly available *more useful*. This is a main aim of the WikiRate platform, and major strand of work in ChainReact. WikiRate has developed a platform that facilitates

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collaboration on the collection and analysis of this kind of data, but getting the data into this shared and standardised environment is itself a challenge.

It is one thing for data about a company's supply chain to be published, but this is just the first step. For that data to be useful it should be known by and accessible to people who have an interest in it or for whom it is relevant. Taking this further, to maximise the usefulness of the data it should be interoperable with all of the data about these entities which comes from other sources. WikiRate is designed as an open centralised repository for this data, the flexible metric structures allow many different types of data to be represented (from ratings of companies to their litres of water use to their network of suppliers) in an interoperable format.

Given that significant volumes of relevant data are now available in various sources, ChainReact has dedicated effort to locating these and, where possible, integrating them on WikiRate. The integration with OpenCorporates grants access to significant volumes of data of a unique type on WikiRate, company supplier lists and government body databases like SEC's EDGAR are other notable examples.

WikiRate contributors who are unaffiliated with the project, like the students who contribute to the PRME and MSA projects, can be considered as data producers and also consumers (see below).

This resource is open, it is made available under a creative commons license and offers significant potential for exploitation. In the final year of the project, as new features for storing the data and analyses are released and polished for supply chain relationships, this resource will become more easily exploitable and its fruit will become more abundant. In any scenario for WikiRate's funding beyond the project term, this resource will remain available for further exploitation; WikiRate.org can be maintained with a minimal budget and even if WikiRate E.v. ceased operations anyone else could create a copy with the open source code and open data.

The tangible parts the WikiRate resource that would suffer in a no-funding scenario are development of new features and the dedicated work on importing from additional structured



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sources at scale (although this could be taken on by any volunteer with the appropriate skills). However, WikiRate has become much more than the sum of its database and open source code, and the organisation now participates in many streams of dialogue about what is missing from or wrong with the available data in the corporate sustainability space. WikiRate is involved in a number of collaborations with standard setters (e.g. GRI, UN Global Compact) and advocacy organisations (e.g. Clean Clothes Campaign) to improve the state of publicly available sustainability information, always with an eye on incorporating that within the WikiRate eco-system. WikiRate has recently been part of discussions about setting standards for supply chain relationship disclosures and the incorporation of quantitative data within sustainability reports.

Going forward, there are other areas which could be impactful and fruitful in terms of building this global resource. There are a number of initiatives exploring the use of blockchain technologies in relation to tracking materials within supply chains and providing assurances about the history of products. A distributed ledger holds promise as a way of managing supply chains because of its immutability, and public access to these ledgers that cannot be doctored or fudged could offer a powerful source of data for understanding the which workers and facilities have been involved in the supply chain of a particular product. WikiRate is in discussion with two organisations that work with blockchains in relation to supply chains about possible collaborations. Software which could parse relevant blockchains and extract data and sourcing information for WikiRate relationship metrics would be a major advance in harnessing the power of that technology to improve supply chains for the public good.

**Information about companies' supplier networks should be *used*.**

The construction of the WikiRate resource is just the foundation from which to tackle the ultimate goal of improving the sustainability of the world's companies. Achieving this goal will require widespread engagement with the subject of sustainability, participation in the dialogue about what it means, how it should be achieved, and how progress should be measured. WikiRate's mission is to promote that engagement, firstly through the participation of individuals in data collection and, soon, analysis. WikiRate's collaborations

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with institutes of further education hold significant promise in that regard, thousands of students have already been acquainted with the availability of data and how that data is being used, and contributed something to it themselves.

As well as promoting this deep engagement with how corporate sustainability is conducted, the WikiRate team are also engaged in promoting the use of the WikiRate resource beyond the platform itself. Data collected by students from a number of Universities as part of the Modern Slavery Act project will be used as part of the Walk Free Foundation's forthcoming Global Slavery Index. WikiRate is working with the Clean Clothes Campaign on a simple external site/widget that presents relevant supply chain data from the platform in a way which is tailored for use by people on the ground who have an interest in those suppliers. The prospect of extending this approach further to create a bespoke resource that is relevant specifically to workers within supply chain facilities is being explored. Paired with an appropriate research effort, a simple site that showed workers in a particular facility which companies they were supplying downstream and what policies those companies had about their supply chain, or how other local facilities were rated on working conditions, could be of great value to those workers.

**It is through demonstrating the productive use of this data, and growing the community of contributors who are acquainted with this use, that more effective corporate disclosures can be pursued.**

In the final year of ChainReact we will be working with new and existing partners to develop and disseminate research products on and beyond WikiRate.org. Tools are in development which will allow for more insights to be gleaned from the WikiRate resource, and to make it easier to push and pull data from the repository. We are also eagerly awaiting the participation of new student groups who will beginning their projects from February, using a set of core research tools which have recently been refined and updated.