What's up in Green IT 2018

By
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the European consortium of Green IT organisations, founded by:

- Alliance Green IT France
- Green IT Amsterdam The Netherlands
- Green IT Switzerland Switzerland
- Sustainability for London United Kingdom

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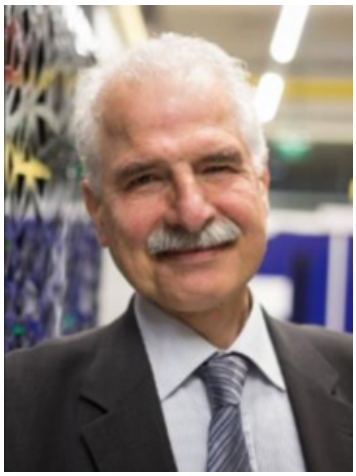
Sustainability is a top priority!

by Anwar Osseyran



ICT industries play an interesting role when it comes to sustainability. On the one hand they consume a lot of energy and create huge amounts of excess heat, not to mention eWaste. But at the same time these industries may very well hold the key to solving a number of environmental issues with which we are currently struggling. Because they make it possible to Green our IT usage and at the same time offer innovative ways to Green other sectors and industries by using smart IT.

With so many research warning us that climate change has become almost unavoidable we also see a sharply increasing need for companies, research institutions and government agencies to work together. Because we need all the creativity, all the energy and (yes) all the money we have available to develop the smart innovations that are necessary to turn the tide - not just in our own countries but in Europe as a whole as well.

Which is exactly the reason why in April of 2017 Green IT Global was launched.

Green IT Global is an initiative started by Alliance Green IT (France), Green IT Amsterdam (Netherlands), Green IT Switzerland (Switzerland) and Sustainability for London (United Kingdom). All four work very hard to improve sustainability - by promoting Green IT, by participating in research and innovation projects and by helping both governments and businesses to be able to access relevant Green IT technology. In other words: we are creating a global Green IT eco system.

In this document a large number of sustainability and Green IT projects have been collected with partners in business, governments and academia.

These projects were very successful. But there is (much) more to be done. Which is why we hope that after reading this document you feel inspired to increase your own efforts to drastically improve the environmental impact of your own business or your own city or region.

Anwar Osseyran,
Director of SURFsara and Chairman of the Board of Green IT Amsterdam

Foreword

Green IT best practices are now collected in one place thanks to Green IT Global (GRIG).

GRIG, a multi-country alliance on Green IT in practice, has reviewed and selected examples of Green IT and showcases these in a resource available on our member websites, that you could find at the end of the document.

Best practice examples are grouped around the focal points of:

- Green IT Strategy, circular economy and Ecodesign
- Datacenters and Networks
- Awareness and Education
- Green by IT (IT for Green)
- Recent Policy Developments

This resource will benefit IT professionals in the private and public sectors, as well as policy makers and researchers, by providing guidance and inspiring examples of Green IT successes. Whether you are looking to update existing systems and practices, or are just getting started with a low-impact approach to IT, this resource offers examples to adopt, adapt, and be inspired by.

The aim of this publication, and GRIG's mission, is to be the ecosystem of knowledge and innovation on Green IT, and a driving force for innovation and sustainability. A collaboration drawing on the expertise of our member organizations in France, the Netherlands, Switzerland and the UK has led to the publication of this resource, to support readers in their own Green IT ambitions.

In order to further Green IT, organizations of any size are encouraged to appoint a 'Green IT Champion' dedicated to ensuring:

- The environmental impact of the organization's IT use is a low as possible
- Opportunities to employ innovative IT solutions for environmental benefit are taken
- Key learnings are shared with peers.

In this document, individuals can look for our best practice examples addressing how to reduce the environmental impact of their own IT choices.

Content

I.

Green IT Strategy, circular economy and Ecodesign

WEBSITE ECODESIGN

Organisation: DG Environment

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Country: Belgium

Contact: Frédéric Bordage, info@greenit.fr

Website: EFE
ESN
greenit.fr
UCM

Introduction

Environment for Europeans is an online magazine published by the Directorate-General (DG) for the Environment of the European Commission. In 2015, European Service Network (ESN) and GreenIT.fr ecodesigned this website.

Context

As part of a collective effort led by UCM to sensitize web agencies to the potential of digital service ecodesign, ESN assessed the environmental impacts of the Environment For Europeans (EFE) website with the help of GreenIT.fr.

The initial audit revealed poor environmental performance (EcoIndex: E) due to heavy technical parameters: 7.6 MB weight, 134 HTTP requests, etc. This poor environmental performance resulted in a 22 seconds full page display time from an ADSL connection and higher environmental impacts than necessary: 3 grams CO2 equivalent (g CO2 eq.) and 2.9 centiliters (cl) of water.

GreenIT.fr and ESN identified many improvement points. But it's a very simple functional design action that has had the biggest impact. The key solution has been to reduce the number of articles posted on the home page from 75 to 10 while allowing users to access the 55 remaining stories clicking on a simple hypertext link.

Thanks to this Ecodesign process, we divided the weight of the homepage by 11, the number of requests by 2.3 and the number of DOM objects by 2. The user experience has been really improved with a full load time of the homepage divided by 4.

Evidence of success

Based on www.ecoindex.fr analyse, the environmental footprint of the website has been lowered by a factor of 2 to 3 depending on the environmental KPI:

- Greenhouse gas: from 3 to 1 gram (g.) of GHG per page
- Water: from 2.9 to 1.6 centiliters (cl.) per page.

Improvement(s) & Next step(s)

The full mission was based on open and free methodologies and tools – web Ecodesign best practices repository, online environmental footprint evaluation tool, etc – provided by the Collectif Conception Numérique Responsable. This toolbox is used daily by hundreds of companies. The next step is to contribute to improve all the tools.

GREENCONCEPT, ECODESIGN ACCOMPANIMENT

Organisation: Neutreo by APL/ Codde Bureau Veritas/Greenit.fr

City: Montpellier

Country: France

Contact: caroline.vateau@neutreo.com

Website:
www.neutreo.com
www.codde.fr
www.greenIT.fr

Introduction

Ecodesign of digital services is an holistic approach which enables the assessment of the environmental impacts with a life cycle analysis methodology including Datacenter, telecom network, and end-user devices.

The GreenConcept project is lead by Occitanie Chamber of Commerce and realized by 3 consultancy companies, all member of Alliance Green IT: Neutreo, Codde Bureau Veritas and GreenIT.fr.

GreenConcept target is to assist 30 Small and Medium enterprises to implement the principle of Ecodesign into the development of their digital services.

www.greenconcept-innovation.fr/

Context

Occitanie is at the core of digital transition with two major cities and part of the French Tech program: The cities are Montpellier and Toulouse.

Digital economy represents more than 10,000 companies and 50,000 direct job, and several clusters are located in this area.

Occitanie Chamber of Commerce is very concerned with the development of sustainable digital services, which is why GreenConcept project launched in 2017.

GreenConcept project has several goals:

- To assist, with experts and 30 companies to implement the principle of Ecodesign into the development of their digital service.
- To promote the Ecodesign of digital service with conferences, training and communication plans (video, website, return on experiment from the involved companies).
- To edit a white paper at the end of the project with the best practices identified during the 3 years of the project.

Evidence of success

On June 2016, 15 companies from several sectors finished their GreenConcept experience: Industry, energy management, agriculture, communication, transport, health...

Many types of project like websites, platform B to B, IOT appliance, webconference, have been analysed with a common life cycle analysis methodology. On each project, results are represented on several scopes: environmental impacts of all the service, for a user during a year and for one functional unit (depending on the project). 4 KPIs have been calculated : Global energy consumption, resource depletion, greenhouse gas emissions, water consumption. To be more explicit, all the KPIs have been translated into common reference (km by car, bottle of water...).

The LCA methodology has been developed by Neutreo, Codde Bureau Veritas and GreenIT.fr, based on the white paper published by Alliance Green IT: http://alliancegreenit.org/wp-content/uploads/Doc%20AGIT/LB-ecoconception-numerique.pdf, it includes the three main contributors of the digital service meaning the end-users devices, telecom network and Datacenter / cloud services.

Many improvement actions have been identified which would permit to split by two or four the environmental impacts of the digital services analysed.

Improvement(s) & Next step(s)

This experimentation shows that there is significant leverage to reduce the digital service and to improve the user experience at the same time.

Considering the Green IT issues at the level of digital service is one of the most important conclusions.

It is also very important to involve all the value chain (from providers to customers) to reduce the environmental impacts.

CREATION OF A GREEN WEBMAIL

CLASSE

Organisation: Cabinet Ricard & Ringuier

City: Paris

Country: France

Contact: contact@classe.io

Website: lean4greenit.barreverte.fr

Introduction

The goal of this project is to provide a convenient and easy-to-use webmail for SOHO that automatically sorts emails in files.

The website has been conceived with greenIT in mind and further: respect for user attention, data privacy and data sovereignty.

Context

Datacenters try hard to be more sustainable, but software engineers do not invest in this domain yet. For this project, software engineers have used Lean during the conception phase to reduce the ecological footprint of the initial website

The objectives of this project were to:

- Remove polling requests
- Remove mail fetch latency
- Get a better score through Ecoindex tool on the homepage

The final objective of SOHO was to allow its lawyers (users) to

- Avoid wasting time sorting their mail
- Allow users to work together on shared files with documents and emails

The website has been developed by a developer over two years.

The project's team has held four conference sessions and two sessions as game meetings.

Evidence of success

- Reduction of the ecological footprint of the initial website by almost 25% thus improving user experience, decreasing the email notifications latency of 30 seconds and web page loading by 7%
- Division of the bandwidth by 10 and ecoindex figures lowered by 20%
- An open source library for asynchronous IMAP has been released.

Improvement(s) & Next step(s)

Lessons learnt :

- There is a convergence between Lean and greenIT.
- When you practice software craftmanship, you are green.
- GreenIT is an opportunity for UX, cost optimisations, and marketing.

If you want to know more about this project, the slides are here : lean4greenit.barreverte.fr

GREEN IT ASSESSMENT

Organisation: Aperam
City: Luxembourg
Country: Luxembourg
Contact: Frédéric Bordage, info@greenit.fr
Website: aperam.com

Introduction

Aperam is a global player in stainless steel with 2.5mt of flat stainless steel capacity in Europe and Brazil. Late 2017, Aperam was looking for external help to launch its Green IT strategy in order to reduce environmental impacts and IT costs.

Aperam targeted two short term goals:
1. understand how Aperam perform in Green IT ;
2. build a Green IT strategy and action plan.

Context

Aperam chose to work with GreenIT.fr for its expertise and the opening of its tools, in particular those related to the Green IT Club, which brings together the most advanced and largest private and public companies in France in the field of Green IT.

With the help of Neutreo, GreenIT.fr conducted a global worldwide Green IT assessment (30 sites, 26,000 assets, 24,000 input data) - environmental footprint, Green IT maturity and performance assessment - based on standard tools and methodologies such as LCA international standard ISO 14040, GreenIT.fr and Club Green IT evaluation tools.

The Club Green IT benchmark helped compare Aperam figures with other big companies to identify hotspots to focus on, build the action plan and quantify potential economical and environmental savings objectively.

The assessment showed that the information system footprint was close to the Club Green IT benchmark average values except for GHG (2x higher for Aperam) partly due to the local electricity grid and a higher number of devices per user. We also discovered that two-thirds of the footprint was concentrated in five sites and that most data rooms were underperforming.

Evidence of success

Based on the assessment and benchmark results, we built a six-point action plan based on Club Green IT organizational and technical best practices repository to help Aperam lower its information system footprint. We also used our unique information system-wide LCA model to quantify potential savings to:

- 1,032 MWh of primary energy
- 1,975 metric tons of greenhouse gas.

Improvement(s) & Next step(s)

Transferability / replicability is at the heart of the tools we used to quantify environmental impacts, identify and quantify best practices to roll out. Our tools are used by more than 40+ large European companies to benchmark each other. Recently, WWF France based its WeGreenIT program on our tools to raise the awareness of the largest French private companies about digital environmental impacts.

II.
Datacenters and Networks

EFFICIENCY THROUGH VIRTUALIZATION

Organisation: COOP
City: Basel
Country: Switzerland
Contact: Christoph Kalt, Christoph.Kalt@coop.ch
Website: www.coop.ch

Introduction

Through consistent virtualization of UNIX servers COOP could achieve substantial efficiency improvements.

This success story emerged out of a Campaign of the Swiss Federal Office of Energy, the Swiss telecommunications association and Green IT SIG (Green IT Switzerland)*.

Context

Coop is one of the largest retail and wholesale companies in Switzerland and employs almost 80,000 people. Internal and external customers are supported out of the two Datacenters in Basel (450 m^2) and Berne (220 m^2). The Datacenters already use free cooling (Basel) and reuse of Heat (Berne) and use to a large extent SSD/Flash storage.

To increase efficiency and reduce cost further, COOP decided in 2011 to start a virtualization project. Today almost all applications are virtualized.

Main benefit(s) & Achieved result(s)

- Reduction of the power consumption of the Unix servers from 151 kW by over 80 percent to 25 kW.
- The smaller devices have a virtualization level of 1:20 and the big servers reach over 1:80
- Coop's mean server load is now 50-70 percent. Before virtualization, the value was about 20 percent.
- Cost savings in maintenance and operation
- Much faster provision of virtual systems.

Improvement(s) & Next step(s)

- To increase the visibility of Green IT COOP started to measure and report.
- The energy consumption of ITC in relation to the energy consumption of the whole company.
- The PUE figures of the Datacenters.

*Other Examples of this campaign can be found at https://www.energieschweiz.ch/page/de-ch/so-kann-man-es-umsetzen (German only)

GREEN DATA CENTER PLATFORM

Organisation: Dutch Datacenter Association & Green IT Amsterdam

City: Amsterdam

Country: The Netherlands

Contact: Julie Chenadec, julie.chenadec@greenitamsterdam.nl

Website: www.greendatacenterplatform.com

Introduction

Green Data Center Platform is an initiative to accelerate the energy transition and improve energy efficiency in the Datacenter sector by sharing knowledge, best practices and lessons learned.

Context

Problem addressed

The platform is part of several actions that the Dutch Datacenter sector is organizing to highlight the use of residual heat from Datacenters which is a lever to speed up sustainability and circular economy in the digital sector.

Objectives

- The platform is a sharing point of knowledge and insights for all stakeholders that are committed to sustainability goals.
- By sharing knowledge, best practices and lessons learned we aim to support progress in terms of sustainability, beyond borders.

Stakeholders

- The Green Datacenter Platform is initiated by the Dutch Datacenter industry, represented by the Dutch Datacenter Association and by the organization Green IT Amsterdam.
- By actively participating, companies become endorsers. Participating in this context means to share your knowledge on this platform.

Main benefit(s) & Achieved result(s)

- 12 projects/case studies are published on the platform
- Anyone can publish a project or case study. However, approval is needed and so all project information sent is reviewed
- A conference is taking place every year called 'Datacenter & Residual Heat' conference. Successful editions in 2017 and 2018 are leading the way towards more awareness on this topic.

Improvement(s) & Next step(s)

- The platform showcases several current projects or projects that may be replicated and scaled up in the near future. More projects to be added and replicated, therefore continuously working on a base of knowledge and inspiration.

EURECA PROJECT

Organisation: University of East London

City: London

Country: UK

Contact: Rabih Bashroush, r.bashroush@uel.ac.uk

Website: dceureca.eu/

Introduction

EURECA is designed to provide tailored solutions to help identify the cost saving opportunities whilst signposting the environmental impact of procurement choices in Datacenters.

Context

The EURECA project focused on empowering public procurement teams to tackle the problem of data centre energy efficiency and environmental soundness by developing common practices and procedures for Public Procurement of Innovation (PPI) and Pre-commercial Procurement (PCP) for Datacentres. The project focused on the public sector because of their enormous IT buying power (more than 55.6 billion in Europe in 2015) and because of their landscape where 80% of public sector datacentres in Europe are small server rooms with less than 25 racks; 40% of servers in public sector datacentres are older than 5 years, but those account for 66% of energy consumption, while only producing 7% of the computing capacity and where the average annual server utilisation for public sector datacentres varied between 15% to 25%, sometimes being as low as 10%.

Evidence of success

On Energy Savings

- Empowered the EU public sector to identify 131 GWh/year of primary energy savings through innovation (27.83 tCO2/year savings, with annual electricity bill savings of €7.159M)
- Analyzed over 337 Datacenters in Ireland, the Netherlands and the UK helping them identify the major energy saving opportunities.

On Policy

- More than 10 EU policies, legislations & standards were informed by EURECA.

On Building Capacities

- 815 stakeholders trained through events held across Europe
- 14 knowledge sharing events attracting 955 attendees were organized in 10 European countries

The EURECA tool

- A Data Centre Maturity Model (DCMM) to assess the technical age of datacentres, and to make informed decisions on the approach towards modernising them;
- A training package with 9 modules with presentations and video recording,

Improvement(s) & Next step(s)

Any public sector procurers or datacenter managers & operators willing to have a better understanding of the energy efficiency of datacenters and their ecological footprint are able to implement what EURECA designed for the past 3 years

- All tools are available for free on the EURECA website.

CHEMICAL FREE SYSTEM REDUCING WATER CONSUMPTION IN THE DATACENTER

Organisation: Schuberg Philis

City: Amsterdam

Country: The Netherlands

Contact: Julie Chenadec, julie.chenadec@greenitamsterdam.nl

Website: www.schubergphilis.com

www.greendatacenterplatform.com/project/schuberg-philis-90-reduction-of-discharge-water-in-the-data-center/

Introduction

In order to reduce the water consumption in Datacenter, this project's main objective was to switch to a new technology for the water discharge in the Datacenter and the chemical free system.

Context

A large Datacenter like Schuberg's uses millions litres of cooling water every year and lots of chemical additives to prevent scale formation in the water cooling system.

It started with a question about the sound of water draining into the sewer, compared to a brand-new cooling tower. The chemical treatment goal is to counteract the natural tendency of water to cause scale, when concentrations build up.

The objective was to improve the water consumption and reduce chemical solutions.

The stakeholders of this project are the Datacenter manager with the help of Frans Durieux from the Aqua Innovation Network and David Sherzer from Universal Environmental Technology.

The core of this patented technology is a chemically engineered reactor driven by controlled partial electrolysis, taking place in an electrically charged tubular reactor. Eight steps have been defined by the Datacenter manager.

Evidence of success

- The discharge water has been reduced by more than 90% (in the cooling tower blow-down water)
- The discharge water has been reduced by more than 40% (in the make-up tower)
- Total water cost: more than 60%
- From 600 liters of chemicals for water treatment every year to almost chemical free
- Return on Investment: 1.5 years
- Datacenter Water Usage Effectiveness: from 2.84 to 1.04

Improvement(s) & Next step(s)

The first organization in the Netherlands to implement this new process.

Any Datacenter wishing to switch from chemical-based to clean water systems, saving money on chemicals and water, can implement this new technology.

III.

Awareness and Education

«CO-WORKING MODEL GREEN IT»

Organisation: Network Energy St. Gallen

City: Canton St. Gallen

Country: Switzerland

Contact: Andreas Schläpfer, a.schlaepfer@schlaepfer-associates.ch

Website: www.schlaepfer-associates.ch

Introduction

The goals and objectives of Green IT are still not known very well in Switzerland. However, there are several initiatives from the Government, professional associations and companies.

The Green IT Special Interest Group (SIG) aims to enlarge their reach within Switzerland. Therefore, a focus group was launched to get in touch with the various stakeholders, their aims and initiatives.

Context

The Canton St.Gallen funded 100% of the work of the focus group "Green in & by IT". The group met four times for four hours from January to April 2018:

- To identify the individual needs, topics and questions
- To get a picture how the current Green IT initiatives fit together
- To explore the upcoming needs for action
- And to phrase a co-working model in terms of an agreement.

The Group members were:

- City of St.Gallen, Swiss Re, Credit Suisse, Swiss Post, Swiss Post Solutions, Raiffeisen Schweiz, Microsoft Schweiz, Federal Office of Energy, Smart City Association, Federal Institute of Technology Zurich (ETHZ), Universities of St. Gallen and Lucerne, Amstein+Walthert, at rete, 7pro solution, Prime Computer, pom+, swisscleantech, GreenITplus and Green IT SIG.

Main benefit(s) & Achieved result(s)

The focus group developed the following results:

- A description of nine main topics and four core topics rated and prioritized by the participating industrial sectors
- A description of "why-how-what" as a basis to formulate the co-working model
- A draft co-working model (agreement)
- Individual action points within the organisation
- The identification of the next important step which will focus on the interaction and interdependence between the corporate sourcing practice, the IT consultants and IT integrators, the suppliers and manufacturers.

Improvement(s) & Next step(s)

- To finalize the co-working agreement and to enlarge the member structure of Green IT SIG
- To ask for an extension of the funding programme of the Canton of St.Gallen
- To get in touch with main players of the "sourcing system".

SWISS DATACENTER ENERGY EFFICIENCY CAMPAIGN

Organisation: Energie Schweiz

City: Bern

Country: Switzerland

Contact: Martin Winiger, kampagne@dcenergy.ch

Website: energieschweiz.ch/rechenzentren

Introduction

The campaign "Less power, more efficiency in server rooms and Datacenters" aims to draw IT operators' attention to the energy-saving potential in their Datacenters.

This is achieved through a direct marketing campaign, online assessments, a catalogue of measures, presentation of best practice examples as well as newsletters and networking events.

Context

Studies estimate the energy consumption of server rooms and Datacenters at 3% of the total energy consumption in Switzerland and the savings potential at 50%. Therefore, the Swiss Federal Office of Energy (SFOE) commissioned an awareness-raising campaign. Led by the Swiss Telecommunications Association, a team of Datacenters, direct marketing and communications experts created the campaign, which was started in June 2017. Green IT SIG played a central role by providing both expert knowledge as well as the assessment tool and catalogue of measures.

The campaign's target audience is the 1200 IT operators in Switzerland that are responsible for server rooms and Datacenters with more than 10 and up to 500 servers. The campaign's success is measured by how many operators agree to fill out the short online energy check, how many actually do so and how many agree to be on the mailing list for additional information.

The campaign is financed both by the SFOE as well as industry partners.

Main benefit(s) & Achieved result(s)

Being aware of the energy saving potential is the very first step in a process that may lead to actual savings when a Datacenter or the software running in it is updated or extended.

Of the 1200 IT operators that were called between June 2017 and March 2018, 60% agreed to being informed about the topics addressed by the campaign. 57% also agreed to fill out the short energy check that provides a first indication of the energy saving potential in their server room or Datacenter. However, so far only 200 have actually completed the survey.

All in all, the campaign has been received very well and the stakeholders are satisfied with the results.

Improvement(s) & Next step(s)

The IT operators that have not yet filled out the energy check will be contacted again with the hope that we will get additional completed surveys.

EDUCATIONAL ACTIVITIES

Valérie Schneider
Conseil en développement durable

Organisation: Valérie Schneider Conseil

City: Boulogne-Billancourt

Country: France

Contact: Valérie Schneider, valerie@valerieschneider.com

Website: www.valerieschneider.com

Introduction

This project describes various GreenIT Educational Activities in several French Engineering Schools : ISEP, EPITA, ECE and ESAIP.

The objective is to increase students' awareness regarding Green ICT technologies figures and their environmental and social impact.

Context

Valerie Schneider has delivered GreenIT training modules in French and English to students in first, second and third year of Engineering School. The duration of the GreenIT module varies from 3 to 12 hours.

The GreenIT topic is put into perspective with Sustainable Development challenges, UN Sustainable Development Goals (SDGs) and Corporate Social Responsibility.

With an additional expertise in Circular Economy, a focus is made on which good practices can be implemented to better close the loop, from resources extraction to product end-of-life; also called Circular IT.

Evidence of success

In 2017, more than 350 students attended to the modules :

- ISEP: 110 students
- EPITA: 100 students
- ECE: 120 students
- ESAIP / ESSCA: 5 students
- ECETECH: 40 students

Improvement(s) & Next step(s)

These modules are the basis for additional training modules targeting organizations in 2018. Short workshops of 1.5 hours are regularly organized to make companies aware of the GreenIT topic.

SCREENING AND DEBATE SESSION ON IT RESSOURCES EXTRACTION

POINT DE M.I.R
Maison de l'Informatique Responsable

Organisation: Point de M.I.R, *Maison de l'Informatique Responsable*

City: Paris

Country: France

Contact: Bela Loto, info@point-de-mir.com

Website: www.point-de-mir.com

Introduction

A screening and debate around the film :

"Rare Earth: the Dirty War" was organised to increase the awareness of digital users regarding the impact of the extraction of rare earth metals.

Context

The main goal was to inform the public about the crucial issue of rare earth metals, in a period of ecological transition.

Speakers : Guillaume Pitron, journalist at Le Monde diplomatique , director and author, and Fabrice Flipo, professor of philosophy of techniques, Telecom EM Paris.

Film screening (52') and debate (90').

The conference was organized by Point de MIR, the house of sustainable IT, promoting the use of sustainable and responsible IT by different profiles (young people, active, elderly people... etc.).

Evidence of success

Type of audience: students, NGOs, local associations, individuals, local elected officials.

Number of attendes: 150 people

Number of book sold: 40 books

Improvement(s) & Next step(s)

- Organizing workshops based on the use of our internal tools (One tip a week videos collection, computer maintenance book, pedagogical cases...)
- Offering trainings ("Best practices in sustainable digital behavior")
- Attending external events organized by key players of the sustainable development sector
- Reselling sustainable devices in our Future House of Sustainable IT in Paris.

GREEN IT WEEK

Organisation: Green IT Amsterdam

City: Amsterdam

Country: The Netherlands

Contact: Julie Chenadec, julie.chenadec@greenitamsterdam.nl

Website: www.greenitamsterdam.nl/

Introduction

Green IT Week is dedicated to spotlight initiatives such as events, projects and good practices which help achieve sustainable targets and ambitions with ICT and technology, for individual organizations, government and society.

Context

Green IT is not just about making ICT itself more sustainable, but also about using these technologies to help address sustainability related societal challenges in general, such as the energy transition, mobility, smart cities and a circular economy.

The energy transition and creating a sustainable society have still many questions to be answered and much knowledge to be gained. Although large-scale adoption and implementation is yet to be achieved, many efforts are ongoing. We get there as we are doing and these are the initiatives we celebrate during Green IT Week.

However, a minimum of two months of preparation is needed to scout events and communicate properly.

Evidence of success

- Twitter: 70 tweets with 43,300 impressions, 37 new followers and 1,100 profile visits
- Publication of articles in 6 external media
- Events: 8 events we partnered with, 3 co-organized and our main large event, the 'Green IT Live'

Improvement(s) & Next step(s)

Organized since 2015, Green IT Amsterdam is replicating the initiative every year, enhancing visibility as a consortium of Green IT Leaders and creating positive impact by doing and sharing. Moreover, it appears easy to replicate such ambition in any country.

WE LOVE GREEN IT

Organisation: Alliance Green IT

City: Boulogne-Billancourt

Country: France

Contact: contact@alliancegreenit.org

Website: www.alliancegreenit.org

Introduction

We Love Green IT is an annual conference day organized by AGIT and its partners to promote Green IT good practices and reflections.

The latest event took place in Paris on 7 November, 2018.

Context

Organized with the support of several partners and sponsors, the 2017 edition aimed to:

- Raise the awareness of stakeholders (companies, communities, public actors, charities) about the digital responsible: Green IT and IT for Green,
- Present exemplary feedback and spread good practice,
- Ensure visibility to AGIT and its partners,
- Federate players in the digital value chain around a common topic (Datacenter, networks, software publishers, cloud operators, user companies, etc.),
- Strengthen synergies between clusters, federations and digital associations around a common topic.

Evidence of success

In 2017, more than 150 people came to the event

- 8 conferences and roundtables
- 37 speakers
- 6 partners
- Corinne Lepage, former French environment Minister participated as guest speaker

Improvement(s) & Next step(s)

Organised in 2015, 2017 and 2018, Alliance Green IT will continue organising one in 2019, enhancing visibility and creating positive impact by doing and sharing. This format of event was initially set to be organized as a whole day, every two years. In order to strengthen the messages, Alliance Green IT has chosen, from 2017, to organize one edition every year, as a half-day format.

DESIGN4GREEN CHALLENGE

Organisation: ESAIP

City: Angers

Country: France

Contact: Amaury Ferard, aferard@esaip.org

Website: www.design4green.org

Introduction

Design4Green Challenge is a 48 hours challenge of ecodesign. The challenge is worldwilde and open to all students and professionnals with IT knoledge.

It includes live coaching sessions and talk with Green IT experts.

Context

Organized with the support of several partners and sponsors, the 2018 edition aimed to:

- Encourage and federate both students and professionnals for sustainable IT,
- Compete the best green developer and tomrrow's talent,

This event is co-organiszed by ESAIP and AGIT France, in charge of creating the subject, defining the infrastructure and evaluating the diferent projects.

Evidence of success

In 2017, more than 250 people, 12 host cities and 7 countries were involved in the event

On Twitter (From Nov. 20 to Nov. 27)

- 1 058 tweets with the hashtag #Design4green
- Publication reach: 390 000
- Engagement: 903

On Facebook (From Nov. 9 to Dec. 6)

- Publication reach: 6 333
- 2 120 views

Improvement(s) & Next step(s)

Organised in 2017 and 2018, ESAIP will continue organising one in 2019, as well as a special North American edition in partnership with "Québec Numérique".

IV.

Green by IT (IT for Green)

INTELLIGENT WORKPLACE OCCUPANCY MEASUREMENT & MANAGEMENT

Organisation: Zurich Insurance Company Ltd.

City: Zurich

Country: Switzerland

Contact: Roberto Scatigna, roberto.scatigna@zurich.com

Website: www.zurich.com

Introduction

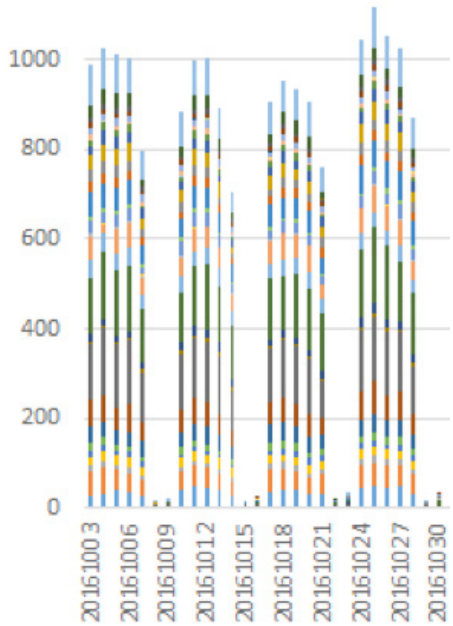
Measuring workplace occupancy with technology-based solutions creates new opportunities to work with our internal customers to develop and deliver right-sized, fit-for-purpose workplace solutions.

The result is less space rented, less energy used, cost savings for the business, and a reduced environmental footprint.

Context

Since 2014, Zurich has been exploring ways to more efficiently and accurately measure workplace occupancy behaviors and patterns (i.e. building, desk, meeting spaces) to support our transition to Dynamic Working (Zurich's activity based workplace strategy).

- Zurich has explored different technology solutions ranging from existing technologies (i.e. security gate access data) to more innovative solutions (measuring desk occupancy through LAN connection points).



Sample: occupancy by function per day

Main benefit(s) & Achieved result(s)

Having hard data to explain real workplace occupancy trends has driven significant improvements in workplace occupancy planning. The result has lead to savings in rentable space, reducing Zurich's energy demand and resulting carbon footprint, as well as operating costs.

For example, with the move-out from our historic Corporate Headquarters in Zurich, we were able to move functions from a 1:1 assigned workplace environment to a flexible, activity-based work environment with 0.7-0.8 workplace ratios.

Improvement(s) & Next step(s)

- Desk occupancy measurement continuing in Switzerland
- Focus on building occupancy measurement through security access points in North America
- Major progress has been made in visualization of data – key step for effective stakeholder engagement (i.e. understanding and interpreting the data).

GREENSERVE PROJECT

Organisation: Green IT Amsterdam

City: Amsterdam

Country: The Netherlands

Contact: Julie Chenadec, julie.chenadec@greenitamsterdam.nl

Website: www.greenitamsterdam.nl

Introduction

The project was commissioned to understand what is the state-of-the-art situation of the ICT used by public organisations and potential case studies and assess opportunities to enable energy and power management measures.

Context

Between 66% & 90% of energy application and cloud services energy can be saved through the use of new ICT equipment, proper setup and an optimal use of the capacity of the servers.

Potential of energy management is underused because the opportunities are unknown and/or unclear to application managers and IT managers.

The objective of this project was to:

- Aim to provide the state-of-play and opportunities related to optimising alignment between hardware, middleware and applications
- Reduce energy consumption without compromising on performance and reliability

The project's stakeholders are Application managers, ICT / Department managers, Trade Organisations, ICT providers, Sustainability/ Energy Managers, CxO level, Buyers.

Evidence of success

- Virtualisation: Energy consumption savings around 20% and utilisation increases an average 10%
- Query scripts: Energy efficiency improvement of an average 25% with corresponding reduction in execution times
- Equipment refresh *(!specific case!)*: 61 MWh energy savings & 30/32 Mton CO2 per year
- Facility upgrade *(EURECA project)*: energy efficiency of an on-premise DC can be improved with 25% through adopting best practices in the DC facilities, and with 35% by moving to a colocation DC that has adopted best practices
- Application features: Optimising a website by moving from a generic CMS to customized HTML resulted in 45% energy savings related to the case study website.

Improvement(s) & Next step(s)

- Lessons learned: All lessons learned have been written in the main report based on three categories (Technology, Organisational involvement and motivation and Contextual and governance implications)Lessons learned: all lessons learned have been written in the main report based on three categories (Technology, Organisational involvement and motivation and Contextual and governance implications)
- Potential for transfer: Special implementation and transfer roadmap has been created to go with the main report www.greenitamsterdam.nl/projects/653-greenserve-energy-management-practices-in-it-layers

V.

Recent Policy Developments

LONG-TERM AGREEMENT FOR THE DUTCH ICT-SECTOR

NEDERLAND ICT
VOOR DE DIGITALE ECONOMIE

Organisation: Nederland ICT
City: Amsterdam
Country: The Netherlands
Contact: Jeroen van der Tang
Website: www.nederlandict.nl/ledennetwerken/mja-netwerk/

Introduction

Long-Term Agreement (LTA) on energy efficiency for the ICT-industry in the Netherlands (MJA3). The LTA provides the Dutch ICT industry a public-private platform that enables independent and transparent monitoring and improvement of energy efficiency by sharing knowledge and experiences.

Context

ICT-sector used 16,6 PJ energy in 2015 and is the 4th largest industry in the LTA MJA3. 16,2 PJ (97%) of total energy usage is electricity, about 1.800 GWh p/a. The ICT-industry energy usage is decoupled from strong growth of data traffic. Energy usage of telecom declines slightly, while datacenters show modest growth, and focus shifts from datacenter cooling measures to load optimization in Datacenters.

The objectives of the project are:

- Between 2005-2020 total 30% energy efficiency improvement (av 2% per annum)
- Participating companies in LTA cover at least 80% of sector energy usage
- LTAs per industry covering 40 different industries and 1.100 companies (incl ETS)
- ICT-industry signed the LTA MJA3 in 2008, 34 participating ICT companies in 2016.

Evidence of success

- Total LTA-ICT energy savings by 2015: 475 GWh.
- Total energy savings of 24% exceeded in 2015 the 2020 sub-target of 20%.
- ICT-industry ranks 4th in reported process energy efficiency improvements by percentage.
- Total LTA-ICT sustainable energy 2015: 1.540 GWh.
- Total reported percentage of renewables: 83%.
- ICT-industry ranks 3rd in renewable energy usage by percentage.

Improvement(s) & Next step(s)

LTA energy plans can be replicated to any other cities willing to bring on board all ICT stakeholders. It needs to offer compliancy with national rules, i.e: environmental energy regulation, EU Energy Efficiency Directive and the plan needs to be approved by national and local competent authorities.

Other links:

- LTA: Long-Term Agreements on energy efficiency in the Netherlands (PDF)
- Covenants results brochure - Long-Term Agreements on energy efficiency 2014 (PDF)

VI.

The Green IT Global Network (GRIG)

About Green IT Globlal

Green IT is

"Information and Communication Technologies (ICT) that generate enhanced environmental, social and economic outcomes and take into consideration the entire product life cycle including production, usage and disposal"

We Say **We Do**

We Learn **We Share**

We Develop **We Transfer**

We are...

- a not-for-profit network of Green IT-focused organisations, collaborating as a driving force for innovation and sustainability
- a hub for Green IT expertise, knowledge and exchange
- a discussion and collaboration partner for business organisations, education, civil society and all levels of government
- a coalition network open to expand and include others

We aim

- to consolidate expertise as well as exchange knowledge across countries, regions and sectors
- to create and amplify positive impact
- to show leadership, respect and encourage green innovation

We do...

- create awareness and promote Green IT
- use knowledge and collaboration to meet our network's goals
- help reduce GHG emissions and increase responsible use of resources through Green IT solutions and knowledge sharing
- connect and share opportunities to support a level playing field

Our Founding organisations

- **Alliance Green IT** France

Alliance Green IT (AGIT) is the association of committed professionals for an eco-friendly digital. Its mission is to unite green IT stakeholders to contribute to the public debate on the role of digital technology in sustainable development. The organization regularly produces content via working groups led by its members and conducts communication and awareness-raising activities through interventions and conferences. The content produced is freely downloadable from our website:
http://alliancegreenit.org/agit/publications/

- **Green IT Amsterdam** Netherlands

Green IT Amsterdam is a non-profit organization that supports the wider Amsterdam region in realizing its energy transition goals. Our mission is to scout, test and showcase innovative IT solutions for increasing energy efficiency and decreasing carbon emissions. We share knowledge, expertise and ambitions, for achieving these sustainability targets with our public and private Green IT Leaders.
http://www.greenitamsterdam.nl/

- **Green IT Switzerland (Green IT SIG)** Switzerland

The objective of Green IT Switzerland, the Green IT Special Interest Group of the Swiss Informatics Society is the establishment and operation of a platform for sustainable developments in the field of Information and Communication Technologies. It is the forum for ICT professionals to discuss sustainability matters and to point out relevant developments. It provides mostly free services to government units, companies, households and educational institutions.
http://greenit.s-i.ch/en

- **Sustainability for London** England

Sustanability for London (SFL) is a not-for-profit group, with a focus on providing practical real-world solutions within the sphere of sustainable ICT. Our jurisdiction covers sustainable ICT challenges found within, and associated with the Greater London area. Our remit includes technology as a consumer and technology as an enabler in a reduction of energy consumption and the emission of greenhouse gases.
https://sfl.london/