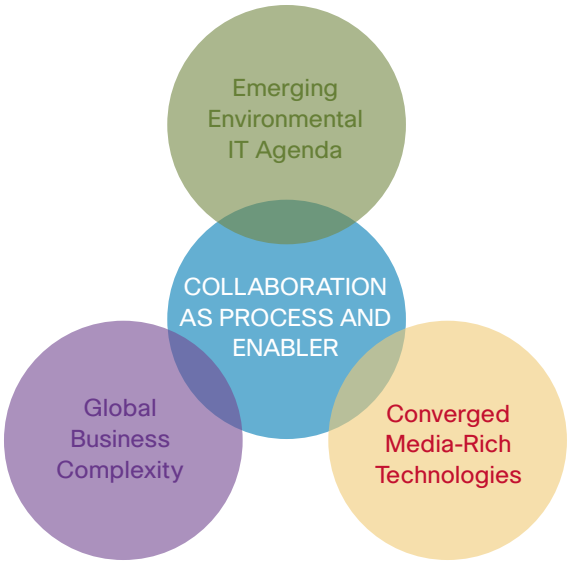
White Paper

Achieving enhanced productivity and business transformation through collaborative working

Virtual collaboration is today the key to sustainable business transformation, transcending barriers of distance and time to reach new levels of productivity and group creativity. Old boundaries – physical, cultural, organisational – are melting away in the globalised economy. Success in the distributed and interdependent markets of the future, with their outsourced corporate functions and atomised supply chains, will depend on increasing corporate agility.

Cisco believes the 21st century model for market-leading organisations is built on the rich human potentialities of networking. The model is integrated and flexible, adaptable and mobile. It is enabled by technology rather than constrained by it, and it is empowered by Unified Communications, enabling every time, everywhere connections, for everyone, over any type of media. Such an approach helps to foster continuous innovation. It brings together teams with complementary expertise – from multiple locations, and often with very different points of reference and backgrounds – swiftly, smoothly and efficiently.

The business benefits range from relatively traditional objectives, such as reduced costs and improved productivity, to newer concerns, such as lowering travel mileage or better use of office space. Meanwhile, with energy costs rising fast, and mounting pressure from governments, investors and consumers for 'greener' business practices, the organisation's environmental profile is edging closer to the top of the corporate agenda.



How better virtual collaboration resolves key and technology imperatives with the drive to improved environmental sustainablity

As forward-looking organisations embark on the next stages in their journeys of business transformation, moving away from outdated command-and-control systems towards more collaborative models, some of Cisco's IT solutions can also help its customers begin to address their CO_2 emissions. Cisco® Unified Communications therefore serve not only today's most pressing business imperatives; they also enable its customers to tackle an increasingly significant set of demands for environmental and social responsibility.

This White Paper focuses on the potential gains that can arise from an approach to innovation and collaboration that is strategically aligned to both business and environmental agendas in the 21st Century. It points to practical measures, from home and mobile working to virtual meetings, or ways of rethinking office space that allow the business to grow in size and profitability without needing to expand physically into new facilities. And it will show how such an approach can lay strong foundations for a cleaner environmental profile.

Cisco Unified Communications and the value of collaboration

Cisco regards the need to adopt environmentally positive business practices as central to the business challenges of the future. The 'green business' agenda will play a key role in generating a new work and communications model. It is set to take its place alongside collaboration, as the key to driving productivity, agility and innovation, and the growing emphasis on effective risk-management to ensure business continuity and compliance.

There are three important ways in which unified communications technologies can help organisations move quickly towards fulfilling such needs. They focus on how to reduce business travel; how to enable teleworking and cut down commuting; and how to make better use of office space. All three involve, in different ways, intelligent deployment of collaborative communications, and all three can significantly help reduce carbon emissions.

Every time, everywhere, everyone's included

Business employees use a mix of voice, video, data, mobility network applications and devices in every type of workspace: offices, conference rooms, hotels, airports, warehouses and vehicles. Cisco Unified Communications allow businesses to collaborate in real-time, with the flexibility to make the appropriate form of communication available every time, everywhere, with everyone included, using any type of media, device or operating system.

Unified communications technologies allow employees to conduct virtual interactions which provide a rich and effective collaborative experience. In this way, therefore, a newly formed team more quickly becomes agile and productive, without having to travel constantly for meetings. The team might make contact first through a phone call or audio conference, before switching to a richer form of interaction, such as a web conferencing for collaborating on documents, or a video conference to provide a greater depth of 'live' human interaction.

How virtual teams can get up to speed more quickly

These richer forms of communications provide a more natural environment and so help build trust and empathy. Putting the right visual tools in place and making them easy to use enables culturally diverse teams to bond more quickly. Research commissioned by Cisco from occupational psychology experts Pearn Kandola shows that it takes two weeks to build trust in the electronic world and, in a multicultural team, 17 weeks to begin outperforming its single-culture equivalent. Given that 64 per cent of human communication is non-verbal, the role of high-quality video communications in the process is becoming critical.

Cisco has simplified incorporation of rich-media interactions into business communication by integrating its solutions with commonly used applications. Intuitive interfaces make arranging, attending, and managing meetings easy. Impromptu or scheduled voice, video, and Web-based communications can be set up and implemented in a single step – from phones, instant messaging (IM) and communications clients; from Web browsers and calendars.

Better collaboration is also a central strand in Cisco's broader vision of the Human Network. As simple transactional exchanges grow into multidimensional interactions – at work, at home or on the move – technological flexibility will enable teams to perform complex collaborative tasks with ease, wherever they may be. And today, there is a growing need to make sure collaboration technologies also serve environmental goals most effectively.

Business benefits and carbon benefits

It is much easier to measure the bottom-line impact of changes in technology and business process than to gauge the environmental impact of those changes with any precision. Financial ROI is familiar territory, calculated by standardised methods. The same is not true, yet, of arriving at the exact organisational carbon ROI for a given set of technologies. That situation is now changing. In future, organisations will have to monitor, measure and manage their carbon emissions no less accurately than they track their finances.

As tighter carbon caps are imposed across the EU, this requirement will become inescapable. The second phase of the EU carbon emissions trading programme runs from 2008 to 2012 and will set more stringent limits. While Europe is ahead of the rest of the world in framing laws to support new environmental objectives, in the US, too, some states, such as Florida, have started to introduce mandatory target emissions cuts. In its 2008 budget, the Canadian province of British Columbia introduced the first carbon tax in North America.

Reducing travel: business journeys

The potential of teleconferencing and videoconferencing technologies to replace business travel of all kinds has been estimated at up to 50 per cent. For business air travel, such estimates go as high as 40 per cent. The right collaborative technologies, applied in the right way in accordance with business transformation goals, can make a significant difference to the organisation's productivity scores as well as its overall carbon footprint .

Today Cisco offers a wider range of virtual meeting technologies to suit the needs of different situations. They include Unified MeetingPlace, for creating interactive online team spaces; WebEx, which enables virtual meetings to be set up 'on demand'; video conferencing; and TelePresence, the most lifelike of all the Cisco Unified Communications options.

Using life-sized, high-definition images and pin-sharp audio, Cisco TelePresence creates an immersive illusion of physical presence. The experience is much like being in the same room, even for participants thousands of miles apart. It therefore enhances improved productivity, as it provides the same visual communication cues as a face-to-face exchange, and can be further extended through online document sharing and other Web-based tools.

TelePresence saves significant amounts of both time and money, while reducing air travel and the associated emissions. Accordingly, Cisco has deployed more than 170 TelePresence units in its own organisation, using them to expand its collaborative abilities and improve productivity. At the same time, TelePresence is playing a key role in fulfilling Cisco's commitment to reduce its air miles under the Clinton Global Initiative on Climate Change.

How TelePresence benefits business users and helps the environment

Cost of a London - Manchester meeting

Method	Financial Cost	Carbon Cost *
Short Haul Flight (BMI Standard Return)	£194	96.0kg
Car Journey (400 Miles, 2.0l Saloon Car)	£60.00	128.0kg
Train Journey (Network Rail Standard Return)	£202.00	38.4kg
TelePresence Call - 3 hours ** (2xCTS3000 @ 7.5WMax; 1kW Network)	£3.84	22.0kg
Unified Communications Call - 3 Hours ** (2xPC+IP Phones @ 60W; 1kW Network)	£0.28	1.6kg

* Carbon Costs based on GHG Protocol allocations per passenger per km

** Estimated TP and UC Financial Costs are for electrical power consumption only; On-net Calls

Cisco's calculation of the benefits, financial and environmental, from different ways to hold a meeting between participants in London and Manchester (above) shows that Cisco Unified Communications are both cheaper and helpful to the fulfilment of environmental goals. Today TelePresence is having a significant impact on business practices:

- Consumer products giant Procter & Gamble is deploying 50 TelePresence units after its CEO, A.G. Lafley, challenged managers to make the company "the most collaborative in the world". Company CIO Filippo Passerini is "very supportive of video as an enabling technology in many different business scenarios", while Laurie Heltsley, its director of global business services, sees the technology as an especially valuable tool when collaborating with suppliers, partners, and retailers.

A full range of collaborative technologies and processes

TelePresence is not the only Cisco solution that can contribute to heightened productivity, enhanced collaboration, and reduced business travel. Others include IP telephony; audio and web-conferencing; video telephony and traditional video conferencing – all with secure access to corporate networks, accessed through a single, easy-to-use interface.

- Germany's Heidelberger Druckmaschinen, a leading provider of print media solutions with 250 sales offices and over 200,000 customers worldwide, adopted WebEx to overcome time-zone and protocol incompatibilities between its centres, thus ensuring all service enquiries were handled on the same day. "With WebEx, we have a platform that allows our regional units to work with self-sufficiency and, at the same time, enables collaboration under one umbrella," says Tom Oelsner, project manager.

Reducing travel: commuting

The proven business benefits of home working include improved performance and staff retention, higher productivity and less absenteeism, with most employees reporting positive effects such as better work-life balance and reduced stress. Home workers generally use part or all of the commuting time saved for working. The task now is to find innovative ways to combine a collaborative home-working mindset with a net reduction in CO_2 emissions.

EU-sponsored research, published in the SUSTEL Report, used 30 case studies in five European countries to assess the effects of remote working on car usage, including its environmental impacts. Despite 'rebound effects' – more home car use offsetting commuter miles saved – the net effect was to cut car travel substantially.

Reductions ranged from 17 miles (28km) a week per person in Denmark to a high of 144 miles (230km) a week in Germany. SUSTEL noted travel savings of up to 193 miles (309km) a week at BT, which has the UK's largest remote workforce. In 2006, Europe had more than 14 million 'teleworkers', working from home at least one day a month, about half the number of their US equivalents in that year, and the European figure is on track to double by 2010.

Avoiding an average daily commuting trip by car of 27.4 miles in the UK, for instance, is estimated to save 1.7 tonnes of CO2 per person each year.

The impact of a transition to home working

In addition to the business gains, governments have long anticipated better air quality from more home working, with improvements in the transport system, an easing of congestion, and lower associated emissions. Avoiding an average daily commuting trip by car of 27.4 miles in the UK, for instance, is estimated to save 1.7 tonnes of CO_2 per person each year.

Yet the equation between reduced commuting and reduced CO_2 emissions is not necessarily straightforward. The environmental impacts of home working depend on specific conditions of climate, organisational needs and characteristics, population distribution, travel patterns, public transport options, government policies and a host of other factors.

In a study by WSP Environmental, for example, based on a notional UK firm employing 200 people, it was found that there was a net halving of carbon emissions only if the employees worked at home in the summer but went to the office during winter. If they all worked at home all year round, the net result was actually more carbon released into the atmosphere.

New travel reduction policies

Virtual collaboration thus needs to be coupled with smart home-working and travel reduction policies to ensure it optimises the collaborative potential while helping to reduce carbon emissions. Broader changes, often driven by governments, must be also taken into account. For example, it is likely, in future, that many more new homes will by law have to incorporate intelligent heating controls, so enabling home workers to set energy consumption levels for optimum comfort and efficiency as well as a reduced CO_2 emissions profile.

When Deloitte Italy wanted to consolidate five branches in Milan into a single building, the company chose a Cisco Unified Communications solution that included IP Telephony, videoconferencing and WiFi. This enabled greater freedom of movement and increased productivity in the new office as well as more home and remote working. Employees can take their extensions with them and remain connected to the corporate network wherever they are, using a Cisco IP SoftPhone and laptop, yielding significant reductions in staff travel.

Better use of office space

The traditional view of office buildings as the fixed heartland of the organisation's working processes, with separate areas for each department and a hierarchical allocation of managerial domains, is changing. Time spent working collaboratively is set to increase to 80 per cent by 2015 – an increase of more than one third over the levels found in 2000 – while mobile technologies will enable productive work anywhere a good connection is available.

The emerging model is the Cisco Connected Workplace – an open, multifunctional environment that combines individual and group space, enabling better use of assets and a productive, collaborative work culture. This transformation will in turn facilitate reduced office space needs, lower consumption of materials and equipment, less electronic and office waste, and – significantly – improved energy efficiency leading to reduced carbon emissions.

On the embedded environmental cost of a new, 100,000-sq ft office building, a 40 per cent space saving translates into 1,500 tonnes of concrete, 280 tonnes of steel, and 2,850 tonnes of carbon emissions – equivalent to taking 560 cars off the road for a year.

Less wasted space, better use of energy

Buildings are estimated to account for more than half the world's energy consumption, and property costs represent the second largest business expense, typically accounting for up to 10 per cent of the entire operational budget. One study found 60 per cent of assigned office work spaces wasted because of people's frequent absences from their desks. Britain's Royal Institute of Chartered Surveyors (RICS) has said that British business fritters away up to £18 billion a year through inefficient property use – a sum then equivalent to 1.5 per cent of GDP.

The potential to cut both costs and carbon emissions by reducing office space is significant. These reductions can be facilitated partly through building design and management, and partly by new working practices, such as home working, hot-desking and 'hotelling'. Cisco Connected Real Estate (CCRE) calculates that achievable space savings per person amount to 40 per cent, while also delivering greater employee comfort, satisfaction and productivity.

Cisco provides tools to handle both sides of the buildings equation. CCRE offers integrated management of building functions over an IP network to maximise energy efficiency within the building; Cisco Unified Communications allow staff to access people and data quickly and easily, irrespective of their location, via Cisco Connected Workspace.

Embedded costs

In the medium to longer term, a further gain from more efficient and collaborative use of office space is in prospect through the avoided environmental side-effects of building new offices. On the embedded environmental cost of a new, 100,000-sq ft office building, a 40 per cent space saving translates into 1,500 tonnes of concrete, 280 tonnes of steel, and 2,850 tonnes of carbon emissions – equivalent to taking 560 cars off the road for a year.

To put it another way, an organisation already occupying such a building could expand its headcount by 40 per cent without incurring the financial and environmental costs of a new office. And there is no doubt that the trend to office space reduction is on the rise. SUSTEL found half of the 30 European organisations surveyed using less space or expecting to do so.

Mobility

Reduction of office space logically implies greater mobility among company workers, whether they are working at client premises, on the road, or moving from one location to another on a large campus. A recent study by IDC suggests that by 2011, more than a billion workers worldwide will be mobile – around 30 per cent of the global workforce[1].

[1] Worldwide Mobile Worker Population 2007-2011 Forecast. *IDC, December 2007*

Such a major shift will require integration of mobility strategies with environmental policies, to ensure that more physical movement among staff does not push emissions up. The business gains of improved mobile working, meanwhile, can be coupled with energy-saving measures inside office buildings both to enhance collaboration and to cut CO_2 emissions.

In this way, organisations may combine their collaboration technologies to attain greater productivity, with lower costs – and better performance against environmental benchmarks.

- In France, car manufacturer Renault is working with Cisco Internet Business Solutions Group to create a new way of working, with more staff working from home and the transformation of traditional office environments into shared workspaces. The plan will allow Renault to close several costly office buildings around Paris, saving $130 million a year, and significantly reducing its carbon footprint.

How Cisco is transforming itself with Unified Communications

- **Cisco scales up global company usage of TelePresence**

By January 2008, Cisco had installed more than 170 TelePresence units at company offices in more than 20 countries and almost 60 cities worldwide. Average utilisation of all units had increased to almost half of the total time when available, based on a 10-hour day. More than 62,415 meetings – amounting to 78,137 meeting hours – were conducted over TelePresence, and 10,316 of those TelePresence meetings involved participants who were able to collaborate freely and avoid travel. This saved nearly $80 million in travel costs alone.

- **Cisco Unified MeetingPlace and WebEx replace 200,000 meetings per month**

During 2007, Cisco conducted nearly two million virtual meetings using Cisco Unified MeetingPlace and WebEx, involving its employees, partners, and customers. While Cisco does not yet track how many of these virtual meetings displaced long-haul and regional travel, the number is certainly in the tens of thousands of miles, if not hundreds of thousands, with a corresponding impact on the company's carbon emissions profile.

- **Cisco Services Europe axes physical meetings**

Direct management action can help further take-up of collaborative technologies. In May 2007, Nick Earle, VP Services at Cisco Europe, announced to his team that this was to be their last monthly face-to-face meeting. In future, he asked them to consider the wide range of collaboration options available with Cisco technology. Face-to-face meetings are no longer the norm. Cisco Services Europe is on target to achieve a 20 per cent cut in travel costs, while Earle projects a personal 57 per cent saving on travel-related emissions for 2008 over 2006.

- **Cisco Connected Workplace Trial Shows Improved Energy Efficiency**

Cisco has run tests at its San Jose campus to verify that properly designed working environments save space, become more energy efficient, and save CO_2 emissions. Comparing a traditional to a redesigned building, it found an estimated 44 per cent improvement in energy efficiency within the redesigned building, a 40 per cent cut in its employee space requirements, and a 22 per cent drop in per capita consumption of materials and equipment.

Conclusion

The successful organisation of the future will know how to work collaboratively, across different time zones and cultures, to reap the full benefits of business transformation. This means a major shift in both individual and organisational behaviour, with an integrated set of unified communications tools to build trust quickly between dispersed or multicultural teams.

Cisco Unified Communications provides the solutions to enable the changes, and can help you implement them to benefit your business, your staff and the environment. To discuss how your organisation might make best use of next-generation collaboration to transform your business and improve its environmental profile, please contact your Cisco account manager.

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