



GREENER ICT >>

Running technology as part of a sustainable business plan



THE GREENER INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) AGENDA IS NO LONGER ABOUT GRASPING THE PRINCIPLES OF ENVIRONMENTAL ACTION. IT'S ABOUT HOW PRIVATE AND PUBLIC SECTOR ORGANISATIONS SHOULD PROCEED IN THE MOST COST-EFFECTIVE WAY TO ACHIEVE FAST RESULTS AND LONG-TERM OPERATIONAL SUSTAINABILITY

CONTENTS >>

» Challenges, pressures and drivers	4
Responding to business, market and environmental issues	
» The route to mature sustainability	6
Four clear stages to reap cumulative benefits	
» Assess, transform, manage	8
The lifecycle approach to a streamlined ICT estate	
» Three key business areas for greener ICT	10
Improvements in the data centre, networking and the workplace	
» Immediate and long-term benefits	12
Driving up value across the organisation	
» Prioritising greener ICT programmes	15
Embarking upon the right strategy	



CHALLENGES, PRESSURES AND DRIVERS

The challenges, pressures and business drivers of greener ICT bring together all the issues of how to make the most of your ICT assets and infrastructure in an energy-efficient and more environmentally sustainable way. As a result, your entire enterprise can reap far reaching cost, productivity, stakeholder and ICT end-user service benefits.

THE CHALLENGES

Most CxOs know their organisation faces a broad-ranging challenge to achieve long-term environmental sustainability. An integral part of that challenge is for CIOs to build and manage leaner ICT infrastructures and systems that achieve four linked objectives:

- » Energy efficiencies and cost reductions
- » Business growth through closer alignment between business and ICT using a 'less is more' model that delivers high-utilisation assets and supports easier scalability
- » Effective planning towards greener transition and change management programmes
- » Operational excellence to support the end-user experience.

THE PRESSURES

At the same time, a variety of market and environmental pressures are bearing down on the business operating environment:

- » Existing and forthcoming regulations and legislation in terms of green tax regimes
- » The fluctuating cost of energy and the unpredictable impact this can have on margins
- » The proliferation of power and cooling requirements in the data centre
- » The need for the manufacture, recycling and disposal of ICT equipment to be more environmentally responsible in relation to international, European Union and national policies
- » Adopting renewable energy sources and emissions trading
- » Maximising ICT investment through a whole lifecycle approach, from sourcing and supply chain to the optimisation of existing infrastructure
- » Reducing travel costs by delivering high quality and high availability unified communications to end-users.

THE DRIVERS

How do these challenges and pressures translate into a greener ICT programme that focuses on the right areas to bring about practical change and create a foundation for mature sustainability? For many organisations there are a number of areas where the business problem drives the green agenda:

- » Corporate environmental responsibility mandate
- » Energy use already at full capacity in the data centre, and the unacceptable cost of building another one
- » The higher cost of electricity now and potentially in the future
- » Problems associated with efficient and demonstrable regulatory compliance, bearing in mind that environmental regulations are now part of mainstream business and reporting legislation, with additional and stricter regulations due in the future.

FROM REACTIVE TO PROACTIVE

All of this means that it is no longer good enough for ICT infrastructure, systems and processes to run reactively – by responding to challenges and pressures only when they reach a critical point of impact upon the organisation. If enterprise infrastructure remains in inflexible silos the only solution is to deploy servers, storage, applications software and network systems tactically.

Instead, what's needed is a strategic and holistic lifecycle view of ICT to proactively transform infrastructure and network systems into highly efficient business-oriented assets that drive up performance, drive down costs and reduce environmental impact – the business value route to sustainability.



ACHIEVING LEANER ICT OBJECTIVES MEANS UNDERSTANDING ALL THE ISSUES, BOTH WITHIN YOUR ORGANISATION AND FROM EXTERNAL SOURCES, SUCH AS MEETING CARBON EMISSIONS LEGISLATION

THE ROUTE TO MATURE SUSTAINABILITY

Atos Origin's experience shows that transforming ICT infrastructure in line with a green agenda needs to be founded on a clear understanding of the appropriate route to take for each area of your business. Procurement, design, implementation and supply chain management must combine proven methodology with the highest quality assurance framework so that governance and technology move along a given route hand-in-hand and deliver cumulative benefits.

Our greener ICT services and solutions offer private and public sector organisations the opportunity to embark upon a journey from their current environmental footprint to mature sustainability based on business value. We use a technology optimisation model with an environmental focus that moves through four iterative stages.



THE ENTIRE APPROACH TO MATURE SUSTAINABILITY MUST SUPPORT PEOPLE AND THEIR INTERACTION WITH BUSINESS PROCESSES

STAGE 1: BASIC

Compliance and measurements

This stage focuses on diagnosing the ICT infrastructure estate to obtain a comprehensive set of environmental impact measurements. The information gained forms the basis for planning an appropriate way forward. It enables organisations to start taking strategic steps towards achieving greener ICT policies and practices, adopting a lifecycle approach, and providing consistency to support regulatory compliance.

STAGE 2: STANDARDISED

Investment and costs

Investment is geared towards industrialisation of the ICT estate to create greater efficiency through economies of scale. Silo-based provisioning and enablement processes are centralised to simplify operational management platforms and procedures. Cost reductions are achieved by aligning ICT and change programmes with business processes and financial cycles. Centralisation of processes and asset management is one aspect that helps to reduce the risk and impact of failing to meet the requirements of carbon emissions legislation.

STAGE 3: RATIONALISED

Shared Services and Information Lifecycle Management (ILM)

Having standardised the ICT estate, it can now be rationalised. ILM processes are used to enhance toolsets for demand and growth planning, supporting shared services and reducing the ICT infrastructure footprint by leveraging virtualisation technologies. Consolidation of the ICT estate will reduce power and cooling requirements now as well as their future growth. Rationalisation provides simplified management of greener Service Level Agreement (SLA) metrics and reporting. And when it is combined with the scalability of industrialisation it also delivers the basis for offering tiered services in terms of service quality and cost.

STAGE 4: DYNAMIC

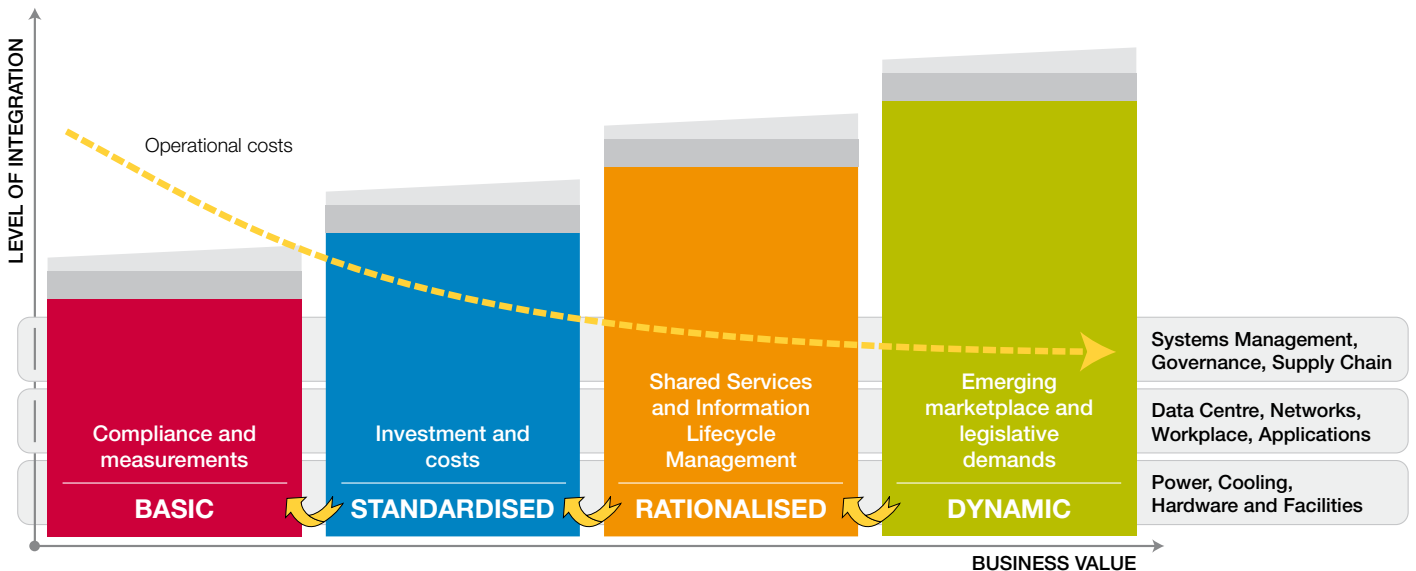
Emerging marketplace and legislative demands

The last stage of achieving mature sustainability is to integrate greener business operations with the whole supply chain, including energy providers – because adopting sustainable procurement practices allows an organisation to see, measure and control the amount of energy it uses. When this is combined with new ICT end-user self-service features (such as a problem-solving web portal) and the benefits of emerging technologies, all aligned with business value metrics, a greener ICT agenda drives the goal of high quality, enterprise-wide corporate governance.



We have a great deal of experience helping enterprises identify where to start their greener ICT transformation.

Technology Optimisation – Greener ICT Maturity Model



ASSESS, TRANSFORM, MANAGE

At each stage of ICT optimisation we apply Assess, Transform and Manage services to the environmental challenges in a phased approach to achieving maturity. Our services focus on three specific ICT business areas – the data centre, networking and the workplace.

ASSESS

Assessment provides an immediate focus to start solving challenges by measuring the current environmental footprint. We can undertake a gap analysis of single ICT issues, or for each of the three business areas outlined above, across your whole enterprise. Assessment reports support the development of a greener technology roadmap with measurable outcomes to ensure scalable and sustainable ICT platforms, infrastructure, hardware and facilities.

Our services include:

- » Baselining the existing ICT infrastructure using our technology optimisation model
- » Assessing the energy consumption footprint of the ICT estate, validated by an independent third-party
- » Identifying and articulating business problems to achieve greener ICT infrastructure
- » A feasibility study to enable the move towards greener ICT infrastructure and services, by reviewing technology cost drivers
- » Identifying tactical greener ICT infrastructure improvements
- » Developing the greener ICT business case to drive strategic change.



**OUR LIFECYCLE APPROACH DEPLOYS NEW
TECHNOLOGIES ALONGSIDE MAXIMISED ICT RESOURCES
IN A POWERFULLY COST-EFFECTIVE COMBINATION**

TRANSFORM

Transformation focuses on the automation and industrialisation of ICT systems and management to improve energy efficiency and reduce carbon emissions. ICT services, including processes, are rationalised and consolidated to create a streamlined infrastructure. Transformation services include:

- » Enabling strategic architectural decisions based on clear figures from the assessment reports
- » Producing a greener ICT roadmap to support transformation activities
- » Producing business and service-oriented cost metrics for overall greener transformation governance
- » Greener hardware evaluation and selection linked into procurement practices
- » Migration planning to enable the transformation to new greener ICT infrastructure and services. Alternatively, maximising and stretching existing assets by using them in a more effective way
- » 'Hands on' practitioners to lead the implementation, deployment and transformation to more sustainable infrastructure and services (for example, power monitoring, virtualisation and consolidation activities)
- » Stimulating 'greener ICT thinking' by going through the transformation process
- » Reporting on greener ICT infrastructure efficiency, savings and benefits post-transformation.

MANAGE

Our lifecycle approach to managing an optimised and environmentally mature ICT estate covers product evaluation, technology architecture and governance, enterprise management tools and deploying new technologies alongside maximised ICT resources. One key management objective is to align power usage with workload requirements, whilst managing the outputs through centralised measurement and control. Our services include:

- » Sustainability dashboard embedded in the overall governance and service assurance models to track and monitor greener ICT improvements and benefits
- » Integrating a green agenda with the budgeting and reporting cycle
- » Integrating greener ICT Key Performance Indicators (KPIs) into service management processes
- » Simplified and consolidated systems management platforms for security, problem ticketing, up/down monitoring, reporting and service management
- » Consistently monitoring ICT workloads and demand planning to distribute load and increase the utilisation of assets
- » A 'reduce, reuse, recycle' framework and approach to lowering e-waste.

Solutions and Services for Greener ICT Sustainability

	Workplace	Network	Data Centre
ASSESS Measure, IT Maturity and Environmental	✓	✓	✓
TRANSFORM IT Infrastructure and Services, IT Strategy, Technology Refresh and Change Management	✓	✓	✓
MANAGE Monitoring, Tracking and Reporting, Optimisation Model and Governance	✓	✓	✓

THREE KEY BUSINESS AREAS FOR GREENER ICT

The data centre, the network and the workplace itself offer tremendous opportunities to optimise technology, reduce costs, and create and maintain much greater operational efficiency – and a greener ICT agenda can drive those benefits through your organisation.



**OUR SOLUTIONS CAN DELIVER INFRASTRUCTURE, POWER
CONSUMPTION, PRODUCTIVITY AND COMMUNICATION
BENEFITS IN ONE INTEGRATED PROGRAMME**

THE DATA CENTRE

In many data centres hardware runs at no more than 25% of its capacity. Meanwhile, server usage is expected to grow six-fold over the next decade, and the current volume of stored data to grow 70-fold. When these expectations alone are factored into energy costs, power consumption, data centre space and management costs, the resulting scenario is unsustainable. Our greener ICT solutions can:

- » Dramatically improve hardware performance through server consolidation, increasing storage efficiency, thin provisioning, shared services and virtualisation, reducing the need for more space
- » Streamline the whole data centre ICT footprint as one means of reducing and improving power consumption; help to consider fresh air cooling, hot/cold aisle management and facilities monitoring
- » Improve zoning of infrastructure assets to reduce the risk and impact of over-provisioning or service enablement
- » Establish effective ILM to address exponential data growth, regulatory compliance, archiving, data retrieval and disaster recovery.

THE NETWORK

Other than the associated cost of staff, an organisation's combined network and telephony equipment represents the single largest recurring ICT cost. Unless it delivers real productivity, the cost is simply a huge expense with no reciprocal benefits. Improving productivity is also the route to achieving much greener ICT solutions. The issues our solutions address include:

Ineffective communication

Rationalising and exploiting features in existing technologies to leverage convergence opportunities and create a seamless network and effective communication platform.

Poor application delivery

Improving network performance and end-to-end application response times through better traffic flow analysis, quality of service and application level service mapping. Removing legacy applications and simplifying complex application environments to support network services that help to deliver a greener ICT agenda.

Security simplification

Establishing the right framework for the entire ICT estate, from user network access control and single sign-on to supporting a centrally managed database, automated asset management and vulnerability scanning.

Convergence enablement

Exploiting emerging unified communications services to enable collaboration, fixed/mobile convergence and IP-connected building service solutions.

Overall network performance

Optimising connectivity through WAN acceleration techniques; improving network latency demands in conjunction with server consolidation; sharing large volumes of data more effectively over the network. All designed to deliver the performance needed to increase efficiencies and create greener ICT services.

THE WORKPLACE

The workplace can now be anywhere – in the office, in the car, on a train, on a plane, or at home. With such mobility, analysts estimate that staff can be up to 30% more efficient when they have the right devices and communications channels. So the challenge is to give end-users the personal communications tools they need and the ability to use them anywhere and at any time. Our greener ICT solutions include:

- » Converging communications such as desktop phone and mobile devices, thus stripping out a cost-base whilst also giving employees a simplified communications platform
- » Virtual desktop and thin client solutions to support potential improvements in provisioning cycles and increased flexibility when deploying new services
- » Providing collaborative technologies to reduce travel and its contribution to the overall carbon footprint
- » Remote provisioning and software packaging deployment to desktops/laptops, reducing the need for support staff to travel
- » System management platforms to shutdown remote desktops out-of-hours, thus reducing energy consumption, alongside 'wake-up-as-needed'
- » Applying security vulnerability patching
- » Unifying email, voicemail, fax and web/video conferencing, as well as delivering workflow and collaborative content sharing applications
- » Implementation of printing policies and services that reduce the amount of energy, paper and printer consumables to improve waste management.

These high-performance solutions give end-users the ability to dynamically access the channels and functions they need for less restrictive and more productive engagement with colleagues and customers. The solutions also track and present the opportunity to report on asset energy consumption, emissions and waste.



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IMMEDIATE AND LONG-TERM BENEFITS

Atos Origin constantly explores, researches and tests the latest and most environmentally sustainable technologies that have been implemented, allowing managed service customers to incrementally evolve their ICT capability without massive capital expenditure every few years. The benefits naturally accumulate as individual solutions and entire business areas become part of an overall greener ICT operation.

Our phased approach to greener ICT, from a basic starting point to dynamic and sustained maturity, provides benefits at every stage, based on delivering measurable value. We design, build and manage the leanest, high performance ICT infrastructure, systems and processes to drive up value whilst embedding a green agenda across your organisation.

OUR APPROACH WILL:

Lower your costs

Reduce the total cost of ownership of the ICT infrastructure and improve resource utilisation by streamlining system management tools.

Improve performance

Deliver improved processes, efficiency standards, metrics and the best-practice benefits of new technologies. Support multiple applications hosted on simplified platforms.

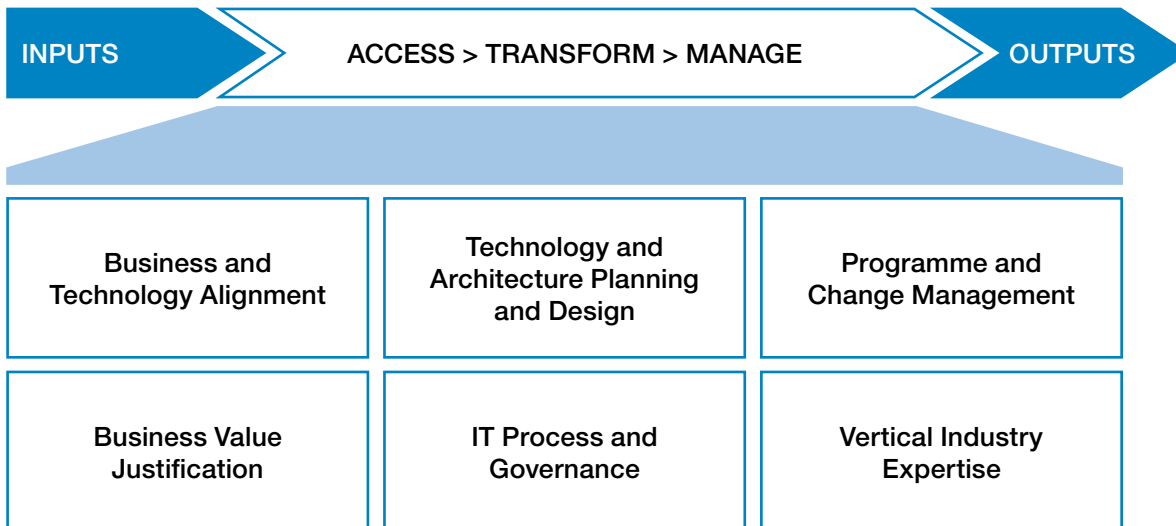
Increase automation

Fully automate and industrialise platforms, provisioning and enabling technologies, to improve business responsiveness.

Mitigate risk

Use energy efficiency requirements to drive transformational change whilst simultaneously maximising current ICT investment and scale.

Business value based on Greener ICT



Short-term benefits

Energy costs can potentially be reduced by 10% to 40%. Virtualisation can reduce hardware requirements by a factor of six, cutting hardware and operating costs in half.

Medium-term benefits

By extending monitoring and intelligent control software from processor-only to the hardware and facilities components of ICT infrastructure, an organisation will be able to measure its overall power consumption – and that provides the basis to make informed decisions regarding how to reduce consumption in specific areas.

Long-term benefits

Long-term greener ICT solutions focus on invest-to-save programmes, for example replacing copper cable with fibre-optic cable, can deliver major savings and future scalability. Energy-aware provisioning policies will guide and confirm attitudes and practices towards long-term sustainability with regard to reuse, recycle, decommission or purchase. For ICT, the issue will always be how to provide centralised and power-efficient services to end-users, with customer-facing solutions tailored to workload, cost-minimisation and business need.



**AS IMMEDIATE, MEDIUM AND LONG-TERM BENEFITS
ARE ACHIEVED, GREENER ICT BECOMES A NATURALLY
EMBEDDED PART OF A SUCCESSFUL BUSINESS STRATEGY**



**WE FOCUS EXCLUSIVELY ON THE NEEDS AND
REQUIREMENTS OF YOUR ENTERPRISE**

PRIORITISING GREENER ICT PROGRAMMES

Clearly, each enterprise will have its own priorities when it comes to running technology as an integral part of a green agenda. But for many enterprises the first priority is to embark upon transforming the ICT infrastructure – because that’s where major cost savings, performance improvements and energy reductions can be readily achieved.

THE GREEN GRID

Atos Origin is a member of the Green Grid, to provide customers with a level of integrity and consistency commensurate with their aims. We review Green Grid approaches and propositions in the light of business efficiency benefits, and help to create greener ICT solutions based on state-of-the-art thinking and best-in-class standards.

LET’S TALK

We have a great deal of experience helping enterprises identify where to start their greener ICT transformation. We provide a genuinely objective view, are expert at laying out the advantages and disadvantages of different courses of action, and completely vendor independent. We focus exclusively on the needs and requirements of your enterprise.

NEXT STEPS

If you would like to know more about Atos Origin’s Greener ICT services and solutions, please email mo.professionalservices@atosorigin.com or visit www.atosorigin.co.uk

“Environmental sustainability – going green – makes such good business sense it is inevitable. CIOs and IT may provide leadership for this movement by focusing on areas of greatest value, establishing a solid management infrastructure and determining which roles IT should take in the transition.”

Simon Mingay, Gartner Research VP

Gartner, Inc. “Going Green: The CIOs Role in Enterprisewide Environmental Sustainability” May 2008

About Atos Origin

Atos Origin is an international information technology services company. Its business is turning client vision into results through the application of Consulting, Systems Integration and Managed Operations. The Company's annual revenue is EUR 5.5 billion and it employs 50,000 professionals in 40 countries. Atos Origin is the Worldwide Information Technology Partner for the Olympic Games and has a client base of international blue-chip companies across all sectors. Atos Origin is quoted on the Paris Eurolist Market and trades as Atos Origin, Atos Worldline and Atos Consulting.

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