BACKGROUND TO THE

IUCN KNOWLEDGE MANAGEMENT STRATEGY

COMPANION DOCUMENT TO THE IUCN KNOWLEDGE MANAGEMENT STRATEGY

DECEMBER 2005

"*It is not the strongest species that will survive, nor the most intelligent, but the one most responsive to change."*

Charles Darwin

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Knowledge management has been identified as one of three key change management strategies for IUCN's 2005-2008 intersessional period. Despite the organisation's many successes in generating, using and sharing knowledge, it has not achieved its full potential in this regard, and is not responding adequately to the challenges of the future. IUCN has therefore during the course of 2005 developed a Knowledge Management Strategy to guide its work.   This companion document provides the necessary **background to the development of this strategy**. A series of action plans (still to be developed) will provide operationalisation details in key areas.

Knowledge management is defined by IUCN as the set of disciplined and systematic actions that an organisation takes to derive the greatest value from the knowledge it acquires, creates, stores, shares and uses. It helps to ensure that knowledge flows smoothly into, through and out of an organisation to help achieve its mission. This implies that it is not the knowledge itself that is managed, but the processes and systems through which knowledge is acquired or learnt, created, captured, stored and preserved, shared and used. The focus is therefore on **people, their work processes and the resulting knowledge products and services**, supported – and not driven -by information and communication technologies. Efforts to improve knowledge management is no longer limited only to an organisation's internal processes, but also focuses on integrating these processes in the most effective way with its outreach to society.

IUCN's heritage, resources and mission present it with huge opportunities for excellence in knowledge management as a key strength in working towards its vision. Knowledge remains the foundation of the Union's three-part Programme strategy of Knowledge, Empowerment and Governance – a foundation recently reinforced by the full incorporation of the Commissions' scientific work into the Programme. But there are many **contextual and organisational challenges** inherent in these opportunities, and clear directions which IUCN has to take if it is to be more than a sum of its parts in fulfilling its mission.

These have informed the Strategy content using a variety of studies, reviews and inputs from across the organisation and from outside:

The global growth of a 'knowledge society' and 'knowledge economy' has changed the environment in which IUCN operates. Meanwhile, IUCN's internal dynamics have been changing the modes of knowledge creation and the horizontal and vertical knowledge flows across the Union. There are new challenges of fostering synergies and integration across organisational boundaries and of respect for different values, perspectives and priorities, as well as a better understanding of non-western knowledge systems. Knowledge roles and profiles have been shifting within IUCN; externally, the Union's scientific pre-eminence and credibility are not taken for granted. Its information technologies and services are inadequate. Its knowledge base is poorly structured and often hard to access. Its communities of practice or 'knowledge networks' require renovation and extension. Its people need to become more effective knowledge workers, making better use of the Union's science and experience to deliver better targeted knowledge products that are rooted in a genuine culture of learning. The organisational structure, culture and funding models should promote these processes rather than hinder them.

Analysed in terms of a Knowledge Management Maturity Model, IUCN's **performance is thus unconvincing**. Without enhanced knowledge management, it is almost certain to be eclipsed by others with similar goals. Yet within the conservation community it is *the* **'boundary' or 'bridging' organisation** that bridges science and policy, linking knowledge to action. It

remains the ultimate 'connector' between expert individuals; diverse organisations; and between the North and the South.

IUCN's Knowledge Management Strategy has therefore been based not only on the identified issues and stage of knowledge management maturity, but on a **three-dimensional premise**:

- It is uniquely placed to become a primary analyst, integrator and synthesiser of knowledge from many different sources in order to achieve major change in the world;

- It *has* to work in technical and political domains other than those comfortably served by the conservation community, and therefore has to develop systematic capacities to identify what knowledge has the best potential to bring about real change towards its mission, and use it to best effect;

- In order to achieve this it will *have* to
  - improve those very basic organisational systems and capacities that foster and support knowledge management;
  - find ways to break down organisational silos – barriers to knowledge creation, sharing and learning between Secretariat offices, the offices and headquarters, between and within Commissions, between these structures and Members; and
  - ensure the efficient and effective delivery of increasingly relevant knowledge products and services to critically important target audiences at national, regional and global level.

IUCN has to shift current global imbalances of power and resource use in the interests of sustainable development at national, regional and global level. Excellence in knowledge management is central to this challenge. The strategy and action plans that accompany this background document explain how the Union will respond.

1. INTRODUCTION: A KNOWLEDGE MANAGEMENT STRATEGY FOR IUCN

A critical change management strategy

In response to growing concerns expressed by IUCN members and Commissions over recent years, the IUCN Director General identified knowledge management (KM) as one of three critical change management strategies for the Union during the 2005-2008 intersessional period. Noting that IUCN is "a successful knowledge-based and knowledge generating organisation", its leadership nevertheless agreed that it was not achieving its full potential in this regard, nor responding adequately to the challenges of the future.

The work so far

In March 2005, a Special Adviser was appointed to develop and implement a knowledge management strategy for IUCN within a two year timeframe. In August a discussion document outlining a theoretical and practical framework laid the foundation for the strategy. It was based on extensive inputs:
- a detailed and very useful study of knowledge management by IISD that reported to IUCN in 2004[1]
- an analysis of 15 strategic IUCN reviews and reports
- a meta-evaluation of 70 IUCN projects and programmes
- Resolutions and Recommendations of past World Conservation Congresses
- intensive discussions with individuals and groups across the Union
- more than 300 recent articles and books on knowledge management theory and practice, and
- the strategies and experiences of more than 20 international and global organisations and companies.

Feedback on the discussion document and further consideration of ongoing initiatives have led to a draft *IUCN Knowledge Management Strategy* completed in November 2005. This is now under consideration for final approval and implementation.

2. THE PURPOSE AND SCOPE OF THIS DOCUMENT

This document serves as background to the *IUCN Knowledge Management Strategy* and its accompanying *Action Plans* which will provide, where required, implementation detail for the change management projects of the strategy. For a complete picture of the evolution of knowledge management thinking in IUCN, this *Background Document* should be read in conjunction with the Strategy and these accompanying documents as well as the IISD study (noted above) and the *Knowledge Management Discussion Document* prepared for the IUCN Directors' meeting on 3 August 2005.

This Background Document sets out
- IUCN's view of knowledge management
- the main knowledge management practices in IUCN
- the changing context within which IUCN operates and which influences its emphases and approaches to knowledge management
- an assessment of the current state of IUCN's knowledge management
- a diagnosis against a Knowledge Management Maturity Model (KMMM) and
- a critical strategic challenge for IUCN.

These factors guided the design of the main areas of work and change management projects of the Strategy.

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[1] Creech, H. (2004). *Mobilising IUCN's knowledge to secure a sustainable future. The IUCN knowledge management study.* Geneva: International Institute for Sustainable Development.

The IUCN definition

Knowledge management is **the set of disciplined and systematic actions that an organisation takes to derive the greatest value from the knowledge it acquires, creates, stores, shares and uses**.

In IUCN, knowledge management initiatives will provide processes and tools that empower staff, Members and Commission members individually and collectively to work with data, information and knowledge[2] in the best possible way to accomplish the Union's mission.

Flows as well as products

It is important to recognise knowledge as flows and not only as products[3]. It is often compared to the way water exists in various forms, is captured or flows through an ecological system – hence also the use of the term 'knowledge ecology' (refer to definitions in Annex 1).

Knowledge flows are created by the work processes through which data, information and knowledge are acquired, created, captured, stored, shared and used, in and by an organisation. Knowledge flow is the way knowledge travels, grows and is captured. Knowledge management therefore helps to ensure that knowledge flows smoothly into, through and out of an organisation to help achieve its mission.

Knowledge management is a misnomer. It is not the 'knowledge' that is managed, but the processes and systems through which knowledge is acquired, created, captured, stored, shared and used.

The adjacent box shows how knowledge management has evolved through 'first' and 'second generations' in recent years. It also emphasises the differences between knowledge management and information management.

Knowledge management now focuses on *people* and their *work processes,* supported but not driven by technology. It is no longer limited to an organisation's internal processes, but also focuses on integrating these processes in the most effective way with the organisation's outreach to society. This emerging emphasis is clearly relevant to IUCN's mission of influencing, encouraging and assisting societies throughout the world.

First generation knowledge management was about using IT systems in work processes. It was current during the 1990s, when knowledge management emerged as a field of practice. It focused on capturing data, information and experience to make them easily accessible. Rooted in and usually driven by technology, it tended to deal with the development of sophisticated data sets and retrieval systems without a primary focus on their use. During this phase, heavy investments were made in technological fixes with little impact on the way in which knowledge was used.

Second generation knowledge management evolved from an understanding of the failures of the first generation approach. Based on a clearer understanding of how knowledge is created and shared, it gives priority to the way in which people construct and use knowledge, which is closely related to organisational learning. Key initiatives therefore include enabling and measuring culture shifts, integrating knowledge sharing with learning, streamlining organisational structures and processes to facilitate knowledge sharing, strengthening communities of practice and improving technology tools for these purposes.

Third generation knowledge management is slowly emerging. *Among others* it encourages engaging clients / diverse stakeholders / target audiences as early as possible in the processes of knowledge sharing and learning.

Information management is not to be confused with knowledge management. It is a subcomponent of knowledge management that focuses on establishing hardware and software systems to create, store, organise and share digital data, information and explicit knowledge resources.

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[2] *'Knowledge' is normally used in this document to encompass all three concepts – data, information and knowledge. Refer to Annex 1 for definitions.*

[3] *The 'knowledge products' are the tangible outputs of the knowledge flows or work processes through which data, information and knowledge are acquired, created, captured, stored, shared and used in and by an organisation. IUCN knowledge products include, for example, its books, reports, guidelines, action plans, newsletters, journals, policy briefs, videos and documented lessons. The tools to capture and organise knowledge, such as electronic portals, databases and repositories, are also included.*

Knowledge management is not merely the latest management fashion, but a more organic and holistic way of understanding and exploiting the role of knowledge in the process of managing and doing work. Analyses in many companies and organisations have highlighted the major benefits that improved knowledge management can bring, including significant increases in organisational efficiency and effectiveness. In many cases these can be translated into financial gains for the company or organisation. It connects people to the knowledge and expertise they need. It fosters innovation, knowledge transfer and improved work processes. It provides tools to distil what knowledge is important and useful, and facilitates individual and organisational learning. It helps to facilitate the seamless integration of different parts of an organisation, encourages collaboration and improves the use and influence of knowledge.

A focus on knowledge management is ultimately empowering, enabling people to become 'knowledge workers' who can face the challenges of working in the modern knowledge-driven world.

The politics of knowledge

IUCN's heritage, resources and mission present it with huge opportunities for excellence in knowledge management, as a key strength in working towards its vision. But, for IUCN as for other organisations, there are many challenges inherent in these opportunities. They give new meaning to Francis Bacon's aphorism that knowledge is power. Building or adjusting knowledge management within an organisation or society is a political process, because it requires people to share and communicate.

In many ways, the governance of societies' environmental behaviour – or of an organisation like IUCN - is the governance of knowledge. The political dimensions of IUCN's knowledge management challenge should not be underestimated.

4. KNOWLEDGE MANAGEMENT IN IUCN

A celebrated history

Knowledge management is not a new concept for IUCN. For decades it has considered itself to be a knowledge organisation, building much of its credibility and impact on its science, its knowledge products and the services it renders through its knowledge.

IUCN has been a prolific and world renowned producer of credible and widely used conservation knowledge. In line with its founding vision, it has always provided the conservation movement with those critically important shared spaces in which knowledge creation and innovation could flourish. For 50 years the formal Commission knowledge networks have spearheaded dynamic efforts to strengthen conservation science; some remain the world's

> *IUCN is a successful knowledge-based and knowledge generating organisation. It is our mandate, our passion and it is our business.*
> IUCN Director General, 2004

most authoritative sources of expertise in their areas. Many conventions and strategies initiated or guided by IUCN provide platforms for action and continue to be steered by its contributions. With key partners IUCN has been at the forefront of using its expert knowledge to help evolve conservation philosophy over past decades. This is exemplified by the acclaimed 1980 World Conservation Strategy; the Global Biodiversity Strategy; "Caring for the Earth: a Strategy for Sustainable Living" (1991); the Convention on Biological Diversity; and Agenda 21.

As decentralisation and regionalisation gained momentum in IUCN, the Union's knowledge became an increasingly important force in conservation efforts at national and regional levels. Many national and regional policies and strategies were informed by IUCN's knowledge contributions. New avenues of

knowledge generation continue to be pursued, most recently engaging the private sector and making the case for the essential role of conservation in reducing global poverty.

To this day IUCN remains a powerful facilitator of flows of information and knowledge between expert peers around the world, between large and affluent conservation bodies and small yet active grassroots organisations, between governments and non-governmental organisations, and between individuals and organisations in the North and South.

A continuing emphasis

Knowledge remains the foundation of the Union's three-part Programme strategy of Knowledge, Empowerment and Governance – a foundation recently reinforced by the incorporation of the Commissions' scientific work into the Programme. Recent statements (see boxes) re-emphasise the centrality of knowledge to IUCN's character and purpose.

Working with knowledge - current processes

One of the challenges in knowledge management is to recognise that the processes through which data, information and knowledge are acquired and created, captured and stored, shared and used are not independent of one another, or sequential – even though they are sometimes described as a 'knowledge cycle'. Instead, they are integrated and interdependent - integral parts of the ecology of the organisation.

Keeping this in mind, we can break these integrated processes down into individual components using one of the knowledge management models[4] to illustrate how IUCN currently works with data, information and knowledge at organisational, team and individual levels. All these processes have to be addressed when improving knowledge management.

> **IUCN's positioning**
> *We mobilise people and organisations to develop and use conservation knowledge for human well-being.*
>
> **IUCN's promise**
> - *Engage more actively with Members*
> - *Expand the knowledge and science for managing ecosystem services*
> - *Demonstrate the interdependence between ecosystem services and human well-being*
> - *Deliver usable knowledge to the right policy and decision makers*
> - *Communicate to build capacity and mobilise alliances*
>
> IUCN Positioning Strategy, 2005

Identifying knowledge

The **identification** of the knowledge most pertinent to an organisation's mission is a key step that is critical in determining its direction and effectiveness. IUCN does this through the resolutions of its Congress, its situation analyses, its programme and project development, its strategic planning as it conceptualises new initiatives and its creative thinking as it identifies and explores emerging scientific paradigms.

This component emphasises the importance for the Union of building the capacity to understand what knowledge will best further its mission at national, regional and global level, especially when resources are limited.

Acquiring and creating knowledge

In the fields of programme implementation, innovative analysis and advocacy, IUCN **acquires** and **creates** knowledge. Though scrutiny of earlier work, and through communities of practice and other partnerships, it draws in expertise and knowledge that it lacks, undertaking various learning processes that lead to new knowledge for the Union itself. Through the science and debate of the Commissions, through monitoring, evaluation and other processes of the learning organisation that it seeks to be, through its generation of

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[4] Model adapted from Probst, G. (2002). *Managing knowledge. Building blocks for success.* West Sussex: Wiley. Refer also to Annex 3 for a description of the model.

lessons from field experience and its analysis and synthesis for policy positions, it creates knowledge as it implements its Programme.

This component highlights the need for IUCN to become a learning organisation - based on the aggregated learning of individuals, teams and communities of practice – that directs, understands and builds on its areas of strength and strengthens key areas that are weak.

Capturing and preserving knowledge

IUCN **captures** and **stores** and thus **preserves** its **explicit** operational, management and conservation knowledge in many forms, ensuring that it remains available for later use. These include the conventional volumes on its library shelves or digitised on its websites; its annual, quarterly, project and evaluation reports; its Intranet; and the digitised databases, information and learning portals and repositories (for example ECOLEX, ECIE, SIS, WCLN, WDPA, PALNet and others) that its Commissions and Secretariat staff have created. When Members' publications and repositories are added, this pool of conservation information grows exponentially.

IUCN also **preserves tacit knowledge** (that cannot easily be expressed in explicit, concrete terms) through methods to retain the expertise and wisdom of its many working groups, staff, volunteers and collaborators.

This component points to the importance of ensuring that institutional memory is not lost, and that both explicit and tacit knowledge are retained through state-of-the-art use of technology and other innovative methods for the transfer of knowledge.

Using and sharing knowledge

At the heart of the Union's programme strategy, however, are the closely allied functions of **using** and **sharing** knowledge. IUCN's advocacy for sustainable development depends upon the effective sharing of its knowledge so that it can be used by practitioners, decision-makers, policy-makers and other stakeholders who are instrumental in advancing the Union's mission.

As it seeks to influence, encourage and assist societies through its policy and good practice advocacy and capacity building initiatives, IUCN is sharing and using its knowledge. Every field project that the Secretariat or Members undertakes, uses or re-uses the Union's data, information and knowledge to build new expertise and knowledge, leading to new knowledge products and services. Many of the projects and other interventions – in the strategic domains of Empowerment and Governance – depend on using the knowledge by sharing it in different forms and formats.

The Union's publications, policy positions, reports, repositories and portals are knowledge products essential to furthering its mission through disseminating, sharing and facilitating the use of its knowledge. As an integral part of knowledge management, its internal and external communications initiatives are therefore pivotal to the success of these efforts.

Among others this component highlights the importance of understanding what knowledge is available that can be re-used, further developed and shared with new audiences, for example through analysis, synthesis and integration of key issues across the different parts of the Union.

5. THE CHANGING CONTEXT WITHIN WHICH IUCN OPERATES

Although it is a well established generator and user of conservation knowledge, IUCN has experienced internal and external changes that demand new and more deliberate approaches to how it creates and works with knowledge.

Growth of the 'knowledge society' and the 'knowledge economy'

Key macro-level changes towards the growth of a 'knowledge society' and 'knowledge economy' have dramatically changed the environment in which IUCN operates. These include among others[5] the digitisation of knowledge, driven by the growth in ICTs; increased connectivity through a global growth in (human and electronic) networks and network relationships; globalisation driven by capital flows, global supply chains for resources and labour and, in particular, global markets for information and knowledge; and ideas-driven growth, which reflects the increasing importance of ideas and innovation for progress and development.

A changing Union

IUCN's evolution from intimate networks of experts, to a small Secretariat supporting global networks of specialist volunteers, to an expanded, decentralised and regionalised body with loosely connected systems of operation, has had a profound effect on how the organisation operates. It is now a Union strongly influenced by its regions, needing to engage with their political, social and economic dynamics. This shift in balance has changed the modes of knowledge creation and the horizontal and vertical knowledge flows across the Union. It has created new challenges of fostering synergies and integration across organisational boundaries. Regional forums have also grown in importance in programming and policy discussions. Their diversity demands respect for different values, perspectives and priorities, as well as a better understanding of different knowledge systems.

Shifting roles

At the same time, roles have been changing within this more complex Union. The Secretariat has become the convenor, coordinator and catalyst for action – in other words the 'knowledge centre' of the Union – as well as executor of projects at field level. The Commissions remain important generators of new knowledge, but have to consider new forms of networks as well as more frequent engagement at regional and national levels through the 'One Programme' approach, in collaboration with other organisations and networks if they do not have all the required expertise themselves.

Members remain the force that determines the direction and foci of IUCN's programmatic work, but also need to work in greater synergy and symbiosis as a true 'Union' to increase the impact of the knowledge of the conservation movement as a whole.

Competition and challenges

The Secretariat, Commissions and Members must all recognise that IUCN's pre-eminence in conservation knowledge and action is widely challenged. More and more organisations can do what IUCN does. Fewer and fewer take IUCN's excellence in conservation knowledge for granted. Healthy competition enhances the efforts of the conservation movement as a whole, but for the sake of its mission IUCN should not allow its credibility as an authoritative voice for conservation to be undermined. Without enhanced knowledge management, IUCN will be eclipsed by others with similar goals.

The need for new thinking

IUCN is operating in an increasingly complex and networked world where powerful forces vie for economic, social and political influence. This challenges the conservation movement to find innovative ways to increase its influence and impact, including among influential new sectors and audiences not usually targeted by the movement. New debates demand fundamental questioning of the premises on which conservation arguments

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[5] Riches, P., Kemp, J., Wolf, P., Pudlats, M. & Le Moult, D. (2003). *European KM forum. IST project no 2000-26393. D 1.2 – fourth release. Future of KM: business roadmap. Knowledge organisation transformation.* Retrieved May 3, 2005, from http://www.knowledgeboard.com/download/3082/EKMF.D12.V07.2003-06-30.pdf.

and action have been built[6], and call for new thinking with the involvement of these new audiences in order to drive concerted action towards accelerated change.

6.   HOW WELL ARE WE MANAGING OUR KNOWLEDGE?

6.1   Knowledge management maturity

Knowledge management analysts at Infosys Technologies have developed a 'Knowledge Management Maturity Model' (KMMM) that is summarised very briefly in the table below. These types of models are often used to diagnose the state of knowledge management in organisations. A competent knowledge organisation of the kind IUCN wishes to be should have attained at least level 4 in this model, and should ideally be at level 5.

Instead, an assessment of IUCN in terms of this model concludes that the Union is mainly at level 2, with some performance at level 3[7]. This clearly indicates that the current state of IUCN's knowledge management leaves much to be desired. We have to accept that as an organisation that bases itself so explicitly on the generation and delivery of knowledge products and services, IUCN's performance as a 'knowledge organisation' is unconvincing.

6.2   Areas in need of strengthening

During the wide consultation process, analyses of reviews and studies, and diagnosis against the KMMM, the following were identified as the most important challenges for IUCN in moving towards knowledge management maturity:

Inadequate technology and a weak Intranet

IUCN's investment in ICT systems and capacity has been inadequate. In spite of the central information management team's best efforts, this has resulted in an inadequate ICT backbone, poor connectivity with regions, inadequate support for the Union's working languages, lack of technical integration and insufficient innovation and capacity to support an extensive knowledge base. Consultations revealed major inefficiencies in the Intranet's handling of routine operational information, and the need for significant improvements in support systems for knowledge at operational, management and strategic levels[8].

These inefficiencies create unnecessary work that slows IUCN people down. Better knowledge management should mean less work, not more.

Not knowing what we know

IUCN does not know what it knows. Due partly to weak and inappropriate ICT systems and a lack of focus on content management, its knowledge and expertise are scattered and inadequately linked, and not systematically structured and organised. Too little reference is made to the wealth of the Union's knowledge in languages other than English. All this makes the Union's knowledge difficult to assess, use and develop, and contributes very significantly to the lack of collaboration both horizontally and vertically across the component parts of the Union.

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[6] For example, Stellenberger, M. & Nordhaus, T. (2005). *Death of environmentalism: global warming politics in a post-environmental world.* Retrieved on May 15, 2005, from http://www.grist.org/news/maindish/2005/01/13/doe-intro/.

[7] Refer for the full diagnosis to Annex 5 in this document.

[8] See Annex 1 for key concepts and definitions in knowledge management.

Table 1: The Knowledge Management Maturity Model: progression from level 2 to 5[9]

	Level 2: Reactive; ad hoc "	Level 3: Aware "	Level 4: Convinced	Level 5: Sharing; innovating
Knowledge base	▪ Ad hoc, fragmented	▪ Structured/organised. ▪ Standardised.	▪ Integrated, accessible, visible ▪ Systematic analysis and synthesis across organisational boundaries*	▪ Seamless learning, sharing across organisational boundaries, including key stakeholders ▪ Continuous improvement using knowledge management ▪ Evidence-based KM decision-making ▪ Strategic management of knowledge base ▪ Processes to identify, create, acquire, preserve, share and use knowledge managed in integrated manner, based on real needs as drivers for approaches and strategies* ▪ Continuous innovation as recognised knowledge leader
Technology	▪ Rudimentary, unconnected	▪ Intranet, collaborative tools and repositories exist, but are underutilised.	▪ Interoperable, used. ▪ Effective virtual teamwork, learning and sharing possible.	
Learning	▪ Ad hoc	▪ Some formal courses; some mentoring. ▪ Internal learning networks form.	▪ Needs-driven capacity building. ▪ Mentoring culture. ▪ Diversity of active communities of practice; may include key external stakeholders*.	
Mainstreaming of KM	▪ Some awareness	▪ Structured KM group. ▪ Dedicated HR, roles. Staff TORs adapted. ▪ KM embedded in planning, M&E systems. ▪ KM strategy implementation monitored*	▪ KM measured. ▪ Clear benefits emerge.	
KM processes	▪ Limited KM focus ▪ Knowledge creation, preservation and sharing ad hoc, unfocused, driven by supply and short-term demand*	▪ Pilot projects ▪ Processes to identify, create, acquire, preserve and share knowledge driven by demand and (agenda-setting) need*	▪ Scaled up organisation-wide ▪ Deliberate, integrated process planning for best knowledge use internally and externally*	

* Adapted from the Infosys model

Shadows over our science

IUCN's credibility is questioned in some quarters when the scientific quality of its knowledge products and services appears to slip. The capacity of Commissions to embrace new forms of knowledge and modes of analysis is not always clear. Content management standards and guidelines for knowledge capture systems are inadequate, leading to a lack of trust in the existing knowledge base. For example, peer review procedures are not clear and consistent enough; in the Union's constantly growing output of grey literature, it is not always clear what quality checks have been done.

A need for new networks

The Commissions have done good service as knowledge networks for IUCN, but now face increasing competition from other networks within and beyond the Union. While there has been some discussion of how IUCN should accommodate and promote other knowledge networks in order to strengthen its knowledge base to meet new requirements, there is as yet no clearly agreed strategy to this end.

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[9] Refer also to Annexes 4 and 5 of this document.

The need for empowered knowledge workers

Better knowledge management means that different skills and insights are needed among IUCN's staff, volunteers and collaborators to meet the requirements of 'knowledge workers' in modern organisations. Professional expertise is as important as ever, but the relevance of isolated technical specialists is declining. Today's knowledge management challenge requires the combination of scientific excellence with flexible, interdisciplinary attitudes and approaches, an understanding of how to learn as individuals and teams, and how to work with knowledge for better results. This includes embracing the potential of new technologies to ease workloads and increase efficiency and effectiveness.

> *In the emergent organisations, managers will need to nurture self-leadership and self-regulation as emphasis shifts from utilisation of canned knowledge to continual creation of new knowledge and renewal of existing knowledge. The key challenge for managers in the forthcoming turbulent environments will be to cultivate commitment to the organisational visions.*
>
> Yogesh Malhotra

IUCN's knowledge management challenge also includes the obligation to understand, embrace and collaborate with other knowledge and value systems around the world as it contributes to the democratisation of science.

Inadequate use of our knowledge

While it is building influence in some sectors, IUCN is in danger of losing it in others, due partly to a lack of focus and inadequate harnessing of resources across the Union to address key areas in a concerted manner. There are not enough purposeful and politically astute efforts to identify what would constitute real change, coupled to efforts to mobilise and share knowledge accordingly in a strategic, systematic and structured way – in particular by taking full advantage of the full range of work that the Secretariat, Commissions and Members are doing, and integrating it accordingly. There is not enough cross-cutting synthesis of the Union's knowledge. The fruits of IUCN's broad experience are not harvested well enough. Knowledge work is often ad hoc, scattered and supply- or short-term demand-driven, weakening potential influence and impact on a larger scale. The focus is too often only on producing knowledge products for general audiences, for specific events or to satisfy donors, without longer-term systematic and effective targeting for significant change.

New barriers and old ones

As intended, the Union's recent process of regionalisation and decentralisation has decentralised decision-making and knowledge production. While the new dispensation has many advantages, it has created new barriers to the flow of knowledge around IUCN, compounding the existing weaknesses in communication between different Commissions and sections of the Secretariat. Joint planning is limited and project or programme frameworks that facilitate comparative work are not yet adequate, although the new Leverage Initiatives provide good potential in this regard. The generation and sharing of knowledge by what is supposed to be a learning organisation are thus seriously impaired.

Meanwhile, the Union's funding model sometimes creates perverse incentives for knowledge sharing and collaboration. Unnecessary barriers to integrated knowledge management arise from the way in which limited core funds are allocated, the regions' heavy dependence on donor-funded project funding, and competition between the Secretariat and Members.

> *The best single lesson I ever learned was to maximise the intellect of the company. You need to gather the knowledge of individuals, share those ideas and celebrate the sharing. That, in the end, is how a company becomes great.*
>
> Jack Welch
> Former Chairman and CEO of GE

Not enough learning and preservation of knowledge

Indeed, IUCN's culture does not embrace learning, mentoring and active sharing of knowledge within the Secretariat and the Commissions, thus weakening individual, team and organisational learning.

Analyses and evaluation results are not internalised or adequately used in decision-making, and feedback loops are weak. Results and lessons often remain in individual units and do not contribute to learning elsewhere in the organisation. Institutional memory is lost when people leave without adequate debriefing, and archiving is weak.

7. THE MAIN CHALLENGE FOR IUCN

Better knowledge management is not just about being better organised internally, as the knowledge management maturity model and organisational diagnosis seem to imply. For IUCN, excellence in knowledge management means achieving *real change* in global understanding and action. The Union's work is ultimately about the empowerment and governance of those local, national, regional and global communities and systems that determine how well we balance the needs and desires of people with the conservation of nature.

Creating a just world that values and conserves nature is therefore a profoundly political and technical challenge that IUCN is uniquely positioned to address within the conservation community. It is *the* 'boundary organisation'[10] that bridges science and policy, linking knowledge to action. It is the ultimate 'connector' between expert individuals; diverse organisations; and between the North and the South. IUCN must use these unique capacities to shift current imbalances of power and resource use in the interests of sustainable development – and knowledge management is central to this challenge.

A **three-dimensional premise** therefore underpins and helped direct IUCN's Knowledge Management Strategy:

(i) For IUCN to fulfil the role for which it was created in its modern context, it will have to shift its efforts and build its capacities over time to become a much more dynamic driver and facilitator for ***analysis, integration and synthesis*** *to build a coherent body of knowledge on those issues of national, regional and global priority that if addressed, will make a major contribution towards IUCN's mission.*

This means that IUCN has to mobilise knowledge very effectively. It has to pull together the knowledge of the conservation movement into a coherent, comprehensive body of knowledge *and* work effectively with the rest of global society, building its networks beyond its own extended boundaries into the rest of the world in critical sectors that impact on conservation. As a 'boundary' or 'bridging' organisation IUCN should serve as an integral but leading element of these broader networks, building and communicating the value of other knowledge as well as its own. It should be first among equals in global efforts like the Conservation Commons. It should also aim to integrate the best and most relevant of the world's conservation knowledge with knowledge from other sectors to build the case for conservation, and make this knowledge available to its target audiences in the most useful formats.

(ii) Debates such as those recently raised by the article "*Death of Environmentalism*"[11] and others have highlighted the urgent need for the conservation community to understand and work within *technical and political domains other than those comfortably served by traditional conservation approaches to knowledge creation.* IUCN must thus develop much *more systematic and effective capacities to identify exactly what knowledge related to conservation has the best potential to bring about real change in the world* and that IUCN should provide because of its role and unique comparative advantage - and how this knowledge should be used for best effect.

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[10] For a description of a *'boundary' or bridging' organisation* refer to Annex 1.

[11] Stellenberger, M. & Nordhaus, T. (2005). *Death of environmentalism. Global warming politics in a post-environmental world.* Retrieved May 15, 2005, from http://www.grist.org/news/maindish/2005/01/13/doe-reprint/.

This means that, for IUCN to be truly effective it should have an excellent understanding of the real issues – those multi-disciplinary, cross-sectoral domains **of 'advanced' or 'innovation' knowledge** on which it should focus more effort, yet without neglecting its **'core' knowledge**[12] - that which enables it to assist its stakeholders on a regular basis. It also means a much more intensive focus on ensuring that it has the capacities – either in-house or through effective networks or communities of practice - to address these domains.

(iii) *In order to achieve the above*, IUCN will have to

- first of all improve those very basic organisational systems and capacities that foster and support knowledge management;
- find ways to break down organisational silos – barriers to knowledge creation, sharing and learning between Secretariat offices, the offices and headquarters, between and within Commissions, between these structures and Members; and
- ensure the efficient and effective delivery of increasingly relevant knowledge products and services to critically important target audiences at national, regional and global level.

The *IUCN Knowledge Management Strategy* was designed on this premise, and taking cognisance of all the issues spelt out in this Background Document.

The Union has potential like no other force in the conservation movement. Yet without improved knowledge management capacities it cannot continue to play the role for which it was created.

> "The primary rationale… *(for IUCN's establishment)* ...was to strengthen the whole nature conservation movement by networking – through linking expert individuals and national organisations and pooling information, assuming that if IUCN helped to share the world's conservation knowledge, its Members would work more effectively and nature would benefit."
>
> *Martin Holdgate,*
> *Preface to The Green Web, 1999*

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[12] For definitions of 'advanced', 'innovation' and 'core' knowledge refer to Annex 1. Note that 'core' knowledge is **not** used here in the context in which it is normally used in IUCN.

DATA, INFORMATION AND KNOWLEDGE (Refer also to Annex 2)

Data are observations or measurements recorded and reported in a standard way. They can take various forms - numeric, graphic, cartographic, textual – but do not have meaning in themselves, even though they might have a purpose.

Information is data with reasoned patterns that provide meaning, in other words, data that have been processed to be useful, for example through organisation, categorisation, indexing, condensing, contextualising or calculating. Information evolves from data; patterns and relationships can be discovered, assimilated and discussed so that data is made informative.

Knowledge is created when critical thinking, evaluation, values, structure and contextual information are applied to information to support decisions or understand concepts. A person's response or action, or contextual consideration for future action, based on data, information, insights, intuition and experience, is knowledge. It thus does not come out of databases but evolves with experience, failures, successes and learning over time. Knowledge provides the potential for action based upon data, information, insights, intuition and experience. Much more than in the case of data or information, it has potential for action.

> *To conceive of knowledge as a collection of information seems to rob the concept of all of its life…. Knowledge resides in the user and not in the collection. It is how the user reacts to a collection of information that matters.*
>
> Churchman, 1977

In a scientific context, there is a strong focus on knowledge as rational assumptions derived from the analysis of information and experience, and is presumed to be "true" and "reliable" when it has been subjected to a process of peer review that has led to consensus about its credibility.

IUCN defines knowledge as "The understanding and familiarity gained by experience or association. It applies to facts or ideas acquired by study, investigation, observation, evaluation and/or experience. Knowledge also includes the development and use of the methods and tools to acquire it."[13] (p. 52)
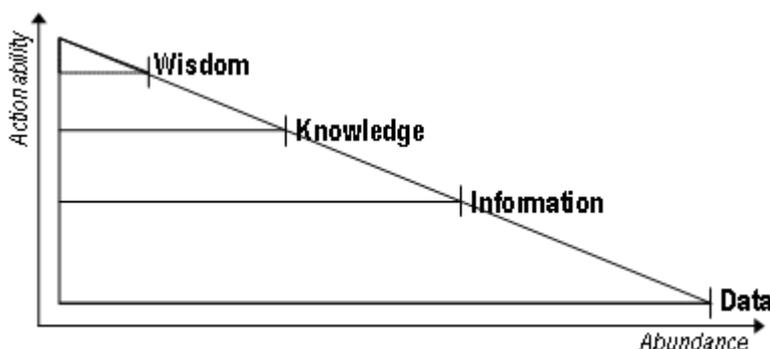

Figure 1: The relationship between data, information and knowledge

There are many sources of knowledge that feed a knowledge management system:
- the knowledge and skills imbedded in our Secretariat staff, contractors, Commissions and Members;
- the experiential knowledge of the individuals, teams and organisation;
- team or network-based collaborative skills;
- informal shared knowledge, values, norms and beliefs; and
- the knowledge embedded in our physical (information and communications technology) systems;

and others

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[13] IUCN – The World Conservation Union. (2004). *The IUCN Programme 2005–2008. Many voices, one earth.*

TACIT AND EXPLICIT KNOWLEDGE (refer also to Annex 2)

Explicit knowledge
- Can be articulated in spoken, written and electronic form, and codified and transmitted stored in documents, databases, web pages, emails, charts, etc.
- Well supported by IT, it can be transferred through conventional electronic channels.

Tacit knowledge
- Personal knowledge rooted in individual experience and involving personal beliefs, values, perspectives, assumptions, judgment and intuition.
- Stored in the heads of people and developed through a process of trial and error encountered in practice, experience and training.
- Personal and context-specific, it is difficult to formalise, record, encode or articulate. Usually not provided in written form, but can be converted to explicit knowledge through externalisation driven by metaphors and analogy.
- Hard to manage, share and support with IT.
- Can only be made visible to others through conscious efforts such as interviews, documentation of decision-making, mentoring, and other means to gather insight for example into how individuals carry out their work.

'BOUNDARY' OR 'BRIDGING' ORGANISATIONS

The value of knowledge is that it provides and increases dramatically the potential for action. IUCN is not only a producer of knowledge. As its KEG strategy indicates, it is committed to making its knowledge turn into action. A recent study by Cash et al [14] shows that managing boundaries between expertise and decision-making much more effectively links knowledge to action. Systems that make a serious commitment to managing boundaries between expertise and decision-making more effectively link knowledge to action than those who do not.

In efforts to harness science and technology for sustainability, 'boundary' or 'bridging' organisations therefore play a critical role. They are mandated to act as intermediaries between arenas of science and policy. They

i.   manage the boundaries between knowledge and action in ways that simultaneously enhance the salience, credibility and legitimacy of the knowledge produced.

ii.   invest heavily in communication, enabling active and iterative communication that includes experts and critical decision-makers;

iii. "translate" knowledge to bridge the gap between experts and decision-makers' view of what is credible;

iv.   mediate through increasing transparency, providing rules of conduct, establishing criteria for decision-making and making the boundary between experts and decision-makers selectively porous, open to certain purposes and closed to others (for example keeping politics out of the scientific process);

v.   enable joint production of models, scenarios and assessment reports – "boundary objects" that are adaptable to different viewpoints and robust enough to maintain their identity across them;

vi.   engage end-users *early* in knowledge needs and bring multiple expertise to the table.

THREE TYPES OF KNOWLEDGE TO BE MANAGED

i.   *From a strategic perspective*: This is the data, information and knowledge directed by the IUCN mission. It is delivered (i) as the scientific and technical knowledge generated through the IUCN Programme (KRAs1-5), that is, the programme activities of the Secretariat and Commissions; (ii) through the knowledge and expertise of Members, often working in conjunction with the Secretariat and Commissions.

ii.   *From a management perspective*: This is the systems data, information and knowledge that enable the management of the Union in a strategic and organised manner - for the organisation overall, for projects and programmes, units, divisions, Commissions and Members' engagement (related to but not limited to KRA 6 for

[14] Cash, D.W., Clark, W.C., Alcock, F., Dickson, N.M, Eckley, N. Guston, D.H., Jäger, J. & Mitchell, R.B. (2003). Science and Technology for Sustainable Development Special Feature: Knowledge systems for sustainable development. *PNAS, 100,* 8086 - 8091.

Programme delivery). The knowledge used for this purpose is primarily obtained from planning, monitoring and evaluation activities; intelligence gathering; and experiences in managing the organisation and its components.

iii. *From an operational perspective*: This data, information and knowledge are needed primarily by Secretariat and Commission staff to conduct their day to day business. It is embedded in operational processes and guidelines, and in understanding what has to be done on a daily basis, and how it should be done (also related to but not limited to KRA 6).

"CORE", "ADVANCED" AND "INNOVATION" KNOWLEDGE

Organisations use this classification of knowledge by its ability to support a competitive or leading position.

i. **Core knowledge:**
The minimum scope and level of knowledge required just to "play the game" in the organisation's chosen field. Core knowledge tends to be commonly held by organisations working in similar fields and therefore in itself provides little advantage over others.
In IUCN this could be the base of IUCN's knowledge generally created through activities in the Knowledge part of the strategy in KRAs 1-3. It provides IUCN with the agility and flexibility to respond to demand and to mobilise its knowledge for "advanced" purposes when the time proves to be right.

ii. **Advanced knowledge**
This knowledge enables an organisation to have a leading edge over similar organisations.
In IUCN this is the knowledge generated by using a significant amount of the power of the Union as well as its capacities as boundary organisation – but not to the extent that it would define IUCN as a leading organisation.

iii. **Innovation knowledge**
This is that knowledge that enables an organisation to lead its community, significantly differentiating itself from others. It often enables an organisation to change the "rules of the game" itself.
In IUCN this could consist of

- Consolidated sets of data or information that could only be gathered and turned into useful knowledge and tools due to the combined strength of the Union. The prime example is the "Red List" of SSC;

- Knowledge generated by using the full power of a well networked Union as well as IUCN's capacities as boundary organisation, providing credible evidence and tools for key cases that need to be made to change the world. IUCN's new cross-cutting initiatives could fall into this category if they succeed in harnessing not only the Programme knowledge produced by the Secretariat and Commissions, but also that of the Members. This will be dependent on IUCN's capacity to convene and work with Members for the purposes of analysis, integration and synthesis of knowledge towards a common cause or case to be made.

THE CONCEPT OF SOCIETAL LEARNING AND CHANGE (SLC)[15]

"Large-scale changes are unfolding in the world as individuals, organisations and societies strive to respond to challenges posed by the need for sustainability in the face of economic globalisation, inequity and environmental crises…. These changes occur when contradictions, paradoxes and dilemmas are so numerous that the traditional way of doing things become untenable, and environmental, societal, economic and policy objectives come into such conflict that prevailing rules break down.

"……Societal learning and change (SLC) is characterised by very deep change and the alignment of societal systems. New skills and organisations have to be built, but these follow changes in beliefs and assumptions. Although first- and second-order change will inevitably be part of SLC initiatives, these will occur against a background of third-order change (Figure 1). Through dialogue and exchange participants in SLC challenge one another's stereotypes and assumptions in order to explore how they can work together differently.

"….It creates new relationships between people and organisations that would normally not interact, but have a common interest in addressing problems and development opportunities.

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[15] *Extracts from* Waddell, S. (2005). *Societal learning and change. How governments, business and civil society are creating solutions to complex multi-stakeholder problems.* Sheffield: Greenleaf Publishing Ltd.

"…..SLC is about changing relationships in profound ways and producing innovation to address chronic problems and develop new opportunities. These are not just interpersonal relationships, but relationships between large sections of society. Both the depth and breadth of learning and change that SLC encompasses are unusual. SLC initiatives develop the capacity of society to do something that it could not do before; they do the same thing for participating organisations.
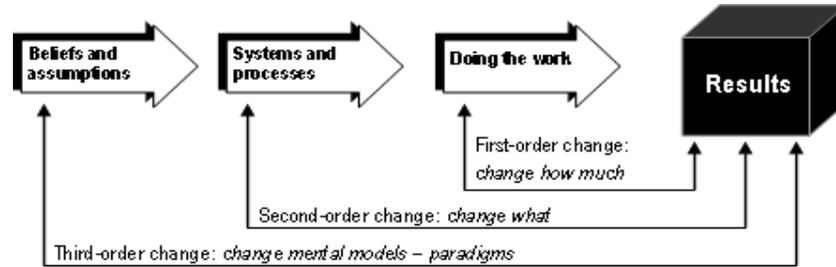

Figure 2: Three orders of change

"….The realignment involves changing relationships between the core systems of society – economic, political and social….. SLC always involves bridging the differences between business, government and community-based organisations. By working together voluntarily, each participating organisation achieves its own goals by changing its relationship with others to co-ordinate their actions and create synergies. SLC is driven both by each group's goal and by a vision of how to build society's capacity to achieve a jointly valued societal goal.

"…This SLC transformation includes change in values, behaviours, beliefs and structures….Creating these new relationships raised awareness and revealed assumptions and a visionary common purpose and desire that was masked by traditional views and ways of working. Developing the relationships does not mean suppressing traditional individual and organisational objectives, but rather reconceiving them, reorganising them to reach traditional objectives and reach new collective ones. …Successful SLC initiatives must address learning and change in depth – with each of the individual, organisational, sectoral, societal and environmental system levels – and across the breadth of spiritual, mental, physical and emotional archetypes – the environmental, political, economic and social systems (Figure 3).
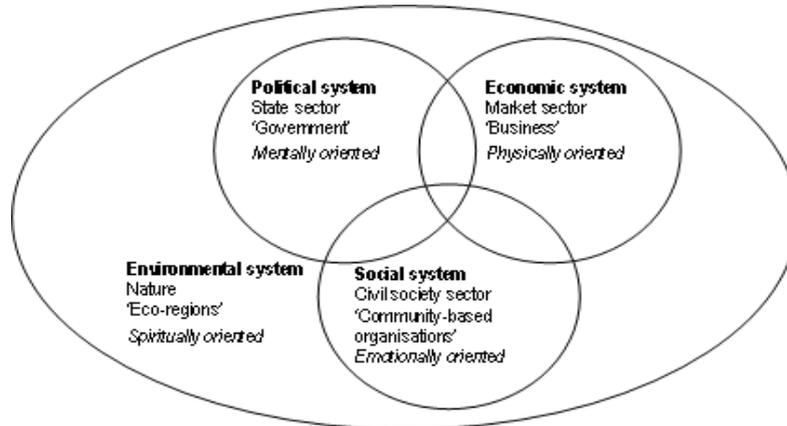

Figure 3: The four sector model

"….By being aware that an initiative is an SLC one, you can substantially enhance its potential for success. SLC provides you with a framework to address complexity within a peer-based culture. Frameworks such as corporate citizenship and social responsibility, public policy, community development and corporate citizenship treat communities, government or business as a privileged centre. In contrast, the SLC framework is one that emphasises 'we're all in this together', that no organisation is privileged and that all are interdependent. With this simple recognition, important barriers to success are overcome and innovation can arise on a grand scale. …. Initiatives often begin with a particular organisation, but success is indicated by transforming them into initiatives that are owned by multiple stakeholders….

"The SLC framework provides a disciplined way to approach complex and large scale change issues. …Initiatives need to be clearly outcome-focused and accountable to objectives. Discipline is a critical part of success, but so is experimentation and visioning…. Clear, quantitative goals supported by learning processes that build knowledge and capacity for success are critical ingredients.

"… The tension between the quest to express our highest individual aspirations and the need to do organisationally valued work is an important driving force in producing the important large-scale change and innovation associated with SLC…..Higher aspirations include the desire to create wealth more broadly, address sustainable development, see justice and equity, and bring about peace…."

TYPOLOGY OF NETWORKS, BASED ON THE FRAMEWORK FOR SOCIAL LEARNING AND CHANGE[16]

The different types of networks can do different things, they require distinct skills to manage and they have distinct development processes. The core process in this typology involves a movement from generating data to information to knowledge to wisdom to action on an increasingly large scale. Listed in terms of this process from the simplest to the most complex type, these are:	
1. **Information network**	This is most often what people think of when they think of a 'network'. Through it, participants share information about a common interest, with the onus on them to do so. It does not develop a common agenda.
2. **Knowledge network**	The goal is to produce new knowledge, skills and tools in the network. It has a defined research agenda, and participation allows sharing costs and enhancing access to data.
3. **Community of practice**	Participants share and develop information, knowledge, wisdom and capacity. This requires deep dialogue, open sharing and self-organised, joint-action development agendas. Benefits of participation include much more rapid development of solid and robust answers to questions of common interest.
4. **Task network**	When people want to undertake a specific task that requires diverse resources and coordination of action, they may form a network that dissolves after completion.
5. **Purposeful network**	Often an issue requires ongoing attention by a group of people or organisations, and they come together to coordinate their action and resources on an indefinite basis.
6. **Societal change network**	This type of network produces social learning and change among members who are intersectoral. The members are issue stakeholders, who undertake deep dialogue and open sharing, and collective coordinated and synergistic action. The change requires their collective competences and networks.
7. **Generative change network**	Social learning and change is also produced by this type of network, but the goal is to generate innovation / change / action beyond participant boundaries. The work is done for network members and those beyond – expanding participation and influence is important. Again, it requires deep dialogue and open sharing, and collective coordinated and synergistic action. The work is done collaboratively because it requires collective competences and scale.

[16] Waddell, S. (2005). *Societal learning and change. How governments, business and civil society are creating solutions to complex multi-stakeholder problems.* Sheffield: Greenleaf Publishing Ltd. p 136.

Knowledge (Definition): Refer to Annex 1.

Knowledge Analyst: A person that interprets knowledge needs and finds the most suitable sources. May also act as a knowledge broker. Collects, organises, and disseminates knowledge, usually on-demand. He provides knowledge leadership by becoming walking repositories of best practices, a library of how knowledge is and needs to be shared across an organisation.

Knowledge Architect: The person who oversees the definitions of knowledge and intellectual processes and then identifies the technological and human resources required for creating, capturing, organising, accessing and using knowledge assets. Architecture is the technology and human infrastructure to support the organisation's KM initiatives. It includes physical (e.g., hardware and tools) and logical (e.g., knowledge policies) dimensions.

Knowledge Assessment: An assessment of the quality and capabilities of knowledge management within an organisation. A typical assessment tool will have a set of questions against which employees score the level of actual and desired capabilities.

Knowledge Asset: An identifiable piece of knowledge that has some intrinsic or extrinsic value. Knowledge viewed as property; a commodity or product with associated costs and values. Those parts of an organisation's intangible assets that relate specifically to knowledge, such as know-how, best practices, intellectual property and the like. Knowledge assets are often divided into human (people, teams, networks and communities), structural (the codified knowledge that can be found in processes and procedures) and technological (the technologies that support knowledge sharing such as databases and intranets). By understanding the knowledge assets an organisation possesses, the organisation can improve its ability to use them to best effect and also to spot any gaps that may exist.

Knowledge Audit: A method of reviewing and mapping knowledge in an organisation including an analysis of knowledge needs, resources, flows, gaps, users and uses. A knowledge audit will generally include aspects of an information audit but is broader than an information audit. An assessment of an organisation's current achievements in Knowledge Management, its current Knowledge Ecology, and the mapping of available Tacit and Explicit Knowledge resources. The systematic analysis of an organisation's information and knowledge entities and their key attributes, such as ownership, usage and flows, mapped against user and organisational knowledge needs. The terms information audit, knowledge audit, knowledge inventory and knowledge mapping are often used synonymously.

Knowledge Base: Typically used to describe any collection of information which also includes contextual or experiential references to other Metadata. The fundamental body of knowledge available to an organisation, including the knowledge in people's heads, supported by the organisation's collections of information and data. An organisation may also build subject-specific knowledge bases to collate information on key topics or processes. The term 'knowledge base' is also sometimes used to describe a database of information. A database containing tacit knowledge in the form of formally coded facts and if-then-else decision rules. An organised structure of information which facilitates the storage of intelligence in order to be retrieved in support of a knowledge management process. A computer held database that record knowledge in an appropriate format for later extraction. It may take various forms depending on whether it supports an expert system or contains documents and textual information for human retrieval.

Knowledge Broker A person who facilitates the creation, sharing and use of knowledge in an organisation. Many organisations have created knowledge broker roles such as 'Knowledge Co-ordinator'. The term knowledge broker is also sometimes used to describe companies or individuals that operate commercially as knowledge traders or provide knowledge-related services. A person, organisation, or process which identifies intersections between Knowledge Seekers (Buyers) and Knowledge Providers (Sellers) and creates a vehicle for linking the two. The party that facilitates connections between buyers and sellers. Brokers are guides, and as such contribute to other peoples' success. Other terms for this role include trusted intermediary and "infomediary".

Knowledge Café: Informal meeting area for the exchange of knowledge. Cafés can be virtual meeting rooms as well as real ones.

Knowledge Capital: The capital of an organisation that is not human, physical or financial.

Knowledge Centre: A central function for managing knowledge resources. Often developed around a corporate library, a typical knowledge centre will manage both physical and virtual resources - documents, databases, intranet content, expertise directories, online discussion boards, etc.

Knowledge Chief Officer: Person responsible for enterprise-wide coordination of all Knowledge Leadership. The CKO typically is chartered by the CEO. The CKO's focus is the practice of Knowledge Leadership, usually solo performer role with no immediate line management and budget responsibility.

Knowledge Codification: The process of articulating knowledge in a more structured way. It typically involves eliciting tacit knowledge from an expert, making it explicit and putting it into a template and format that aids dissemination and understanding.

Knowledge Collective: The aggregation of the personal knowledge of the members of the collective, as well as the shared knowledge as manifested in the artefacts and tools, normative behaviour and value system of the culture.

Knowledge Commercialisation: The process of creating tradable goods and services from a body of knowledge.

Knowledge Content: The meaning that underlies data, information, knowledge, or wisdom.

Knowledge Creation: Is a spiralling process of interactions between explicit and tacit knowledge where ideas form in the minds of individuals; interaction with others is usually a critical step in developing the ideas. Nonaka's model of this process is composed of 4 steps: socialisation (tacit to tacit); externalisation (tacit to explicit); combination (explicit to explicit); internalisation (explicit to tacit). Use of reasoning to create new meaning or understanding; to know something that was not previously known.

Knowledge Cycle: A sequence of core knowledge processes that results in new knowledge. There are two main cycles - the innovation cycle and the knowledge sharing cycle.

Knowledge Delivery: Automated information access. Intelligent computational mechanisms can access information relevant to the user's task at hand and present the information to the user. The critic mechanisms are examples of knowledge delivery mechanisms. Complements information access and is needed in situations where users are unable to articulate the need for information or are unaware that they may profit form information.

Knowledge Discontinuity: A phenomenon that occurs when experienced knowledge workers move from one position to another position (inside or outside of an organisation) without having adequate time or knowledge management facilities to transfer their tacit knowledge to co-workers.

Knowledge Ecology: A way of looking at organisations that emphasises the interplay by the actors in a system of knowledge by focusing on the flow and transformation of knowledge processes. It is a network that constitutes a kind of ecosystem of ideas. The component of knowledge management that focuses on human factors: namely, the study of personal work habits, values, and organisational culture.

Knowledge Economy: An economy in which knowledge is one of the main factors of production and constitutes the major component of economic output. This may occur directly through knowledge products and services or indirectly where knowledge is an added-value part of other products and services. Contrast with agricultural and industrial economies. An economy in which knowledge plays a predominant part in the creation of wealth. An economy in which value is added to products primarily by increasing embedded knowledge content and in which the content value evolves to exceed the material value.

Knowledge Engineer: Converts explicit knowledge to instructions and programs systems and codified applications.

Knowledge Explicit: Explicit knowledge is knowledge that is easily codified and conveyed to others. Explicit knowledge can be easily expressed in words or numbers, and can be shared through discussion or by writing it down and putting it into documents, manuals or databases. Examples might include an instruction manual or a report of research findings.

Knowledge Facilitator: Person who helps harness the wealth of knowledge in the organisation. Facilitators engender a sense of ownership by those involved, by helping them arrive at a jointly developed solution.

Knowledge Flow: Knowledge flow is the way knowledge travels, grows and is stored. Knowledge flows 1) Up and down from management; 2) Within circles of sharing (such as shared interests between staff performing similar or complementary roles); 3) Through planning, investigation, and training; or 4) Through common sources such as books, reports, data bases or knowledge bases.

Knowledge Harvesting: A set of methods for making tacit knowledge more explicit - getting people's knowledge into documents, so that it can be more easily shared with others.

Knowledge Hoarding: The practice of limiting the flow of information, or failing to share it.

Knowledge Individual (individual knowledge): The accumulation of personal history, skills, education and experience that informs the judgment of an individual in a given situation.

Knowledge Infrastructure: An integrated architecture of computers, systems, networks, and communication technology that supports horizontally integrated and vertically integrated knowledge management.

Knowledge Initiative: Building knowledge management capacity in terms of resources, knowledge infrastructure, and content and developing an organisational context to implement that capacity through leadership, culture, and learning.

Knowledge Integration: Combining separate knowledge management programs into a more complete whole, coupled with adapting diverse groups into a coordinated knowledge-sharing culture.

Knowledge Interrogator: Person responsible for managing the content of organisational knowledge as well as its technology (Corporate librarian and knowledge integrator). He / she keeps the database orderly, categorise and format documents, delete the obsolete, and connect the users with the information they seek.

Knowledge Leadership: Knowledge leadership represents a broad category of positions and responsibilities, from individuals who literally fall into the de facto position of knowledge manager with no change in title, formal responsibilities or compensation to very well compensated senior executives who are recruited specifically for the role of CKO. No taxonomy could possibly set forth all of the titles and responsibilities included under knowledge leadership.

Knowledge Lens: The perspective or viewpoint of the problem or situation. A KM expert brings experience from many industries or disciplines to focus valuable insights or illuminate new ideas. Through this lens the KM expert synthesises the situation and helps makes sense of disparate pieces.

Knowledge Management Maturity: The level of adoption of KM within an organisation. This is gauged by reference to a KM maturity model that looks at stages of maturity from ad-hoc to fully embedded and integrated into the organisation's core activities.

Knowledge Management Solution: Strictly speaking, a solution to a knowledge management problem, or the use of knowledge management techniques to solve an organisational problem. However, in practice a 'knowledge management solution' more often than not refers to a piece of knowledge management technology or software.

Knowledge Management Strategy: A detailed plan outlining how an organisation intends to implement knowledge management principles and practices in order to achieve organisational objectives.

Knowledge Management: There is a wide variety of definitions of knowledge management. IUCN uses the following: the set of disciplined and systematic actions that an organisation takes to derive the greatest value from the knowledge it acquires, creates, stores, shares and uses.

Knowledge Manager: A role with developmental and operational responsibility for promoting and implementing knowledge management principles and practices. He/she coordinates the efforts of engineers, architects, and analysts. The Knowledge Manager is most often required in large organisations where the number of discrete knowledge-sharing processes risk fragmentation and isolation.

Knowledge Mapping: A process which provides an organisation with a picture of the specific knowledge it requires in order to support its business processes. A process to determine where knowledge assets are in an organisation, and how knowledge flows operate in the organisation. Evaluating relationships between holders of knowledge will then illustrate the sources, flows, limitations, and losses of knowledge that can be expected to occur. The process of identifying core knowledge and the relationship between knowledge elements.

Knowledge Maps: Guides or inventories of an organisation's internal and external information and knowledge sources. The sources of information include files, web pages (in intranets and extranets), document management systems, recordings of best practices, databases, data warehouses and data marts. Sources of knowledge include subject experts, business rules, workflow charts, procedure manuals, "cookbooks", and diagrams. A map may be portrayed in many visual formats, such as a hierarchical tree or a node and link diagram. It is typically a task carried out as part of a knowledge audit.

Knowledge Market: A gathering place where owners of intellectual property can barter, sell and otherwise exchange their knowledge for value. Such markets may be undifferentiated, e.g. knowledge bazaars; organised through knowledge brokers; or modulated through the instrument of the knowledge guild. A concept developed by Laurence Prusak which sees knowledge in firms behaving like a traditional, tangible commodity which can be exchanged, bought, bartered, found, and generated. A price mechanism of the knowledge market is reciprocity, the expectation that one will receive valuable knowledge in return for giving it. Additionally, the knowledge may have either present or

future value for parties to the transaction. A marketplace for the buying and selling of knowledge. Online knowledge markets are sometimes referred to as knowledge e-marketplaces. They commonly allow the posting of knowledge needs and knowledge offers.

Knowledge Mining: The process of discovering valid, comprehensible, and potentially useful knowledge from large data sources with the purpose of applying this knowledge to making decisions.

Knowledge Networking: The process of sharing and developing knowledge through human and computer networks. Knowledge resulting from people sharing information with one another formally or informally. Knowledge networking often occurs within disciplines (such as programmers communicating with one another) and projects (such as all of the people working on a new software product sharing information with one another).

Knowledge Object: A physical object used to support knowledge synthesis (e.g. a plant, insect or rock collection). A piece of knowledge held in a well-defined and structured format, such that it is easy to replicate and disseminate. Although predominantly in the form of explicit knowledge, it may contain some element of human knowledge. In philosophy, any piece of knowledge.

Knowledge Owner: The person or people who are responsible for knowledge, a knowledge domain, or set of documents. The knowledge owner is responsible for keeping the knowledge and information current, relevant, and complete. The knowledge owner usually acts at a local or decentralised level. The knowledge owner may or may not be the author or creator of the specific content. The owner may be the expert in the subject area or a skilled editor.

Knowledge Portals: Special web pages that organise access to all of the online resources about a topic, and includes groupware and tools for collaboration and interaction, providing a one-stop shop of sorts.

Knowledge Practice: A specific method or technique used to manage or process knowledge. Several methods may be used within a knowledge process. Deals with the cognitive and organisational processes, structures and environments that lead to enhanced understanding, innovation, and change.

Knowledge Preservation: The implementation of processes to capture, archive, and protect explicit and tacit knowledge and to maintain accessibility to it as technology evolves for as long as the knowledge remains useful.

Knowledge Process: The collection of tacit and explicit knowledge relating to the effective execution of a process. The creation of a process asset that ultimately contributes to core competency must include the instinctive, Tacit Knowledge that contributes to the success of that process. This tacit knowledge can be reduced to a set of rules or converted to explicit knowledge and added to the knowledge base. This process knowledge can then be managed more effectively and contribute to a living knowledge chain of competitive assets which are easily modified as customers and markets change. Organisational context, human activities, content value, information systems, and information technology that are used to add value to content by increasing the amount of underlying processing and depth and breadth of meaning. A broad knowledge activity often performed at an aggregated level. Examples are knowledge gathering, sharing and dissemination. Knowledge moves from one process to another as part of a knowledge cycle.

Knowledge Product: A product which consists almost entirely of information or knowledge. Knowledge that has been adapted to the needs of specific users. IUCN regards 'knowledge products' as the tangible outputs of the knowledge flows or work processes through which data, information and knowledge are acquired, created, captured, stored, shared and used in and by an organisation. IUCN knowledge products include its books, reports, guidelines, action plans, newsletters, journals, policy briefs, videos and documented lessons. The tools to capture and organise knowledge, such as electronic portals, databases and repositories, are also included.

Knowledge Provider / Seller: An individual that possesses knowledge of value to other individuals.

Knowledge Refining: The process of filtering, aggregating and summarising knowledge drawn from a wide range of resources.

Knowledge Repository: A place to store and retrieve explicit knowledge. A low-tech knowledge repository could be a set of file folders. A high-tech knowledge repository might be based on a database platform. Collections of knowledge "nuggets", the contents of which are characterised by having the authority of a best practice and having been organised according to some scheme to facilitate visualisation, manipulation, and navigation. Examples of repositories include: threaded discussion databases that hold "lessons learned" and which must be created with--at a minimum--a date, author and subject classification; product marketing materials and methods, which represent a distillation of product knowledge; competitive intelligence; and people. A store of knowledge. While the term typically refers to explicit forms of knowledge, such as documents and databases, it can also refer to human-held knowledge.

Knowledge Representation: The framework and methods for coding tacit knowledge in a knowledge base.

Knowledge Revolution: The global-scale transformation from an economy based on the value of material goods to one based on the value of knowledge.

Knowledge Seeker: An individual that needs to access knowledge held by another individual or stored in a repository.

Knowledge Source: The person, document, non-print source, or place that is the origin or prime cause of knowledge.

Knowledge Steward: Person who provides minimal, ongoing support to knowledge users in the form of expertise in the tools, practices and methods of knowledge leadership. The steward is usually an individual who has fallen into the role of helping others better understand and leverage the power of new technologies and practices in managing knowledge.

Knowledge Synthesis: Using reasoning to integrate data and information from multiple domains to create a new meaning or understanding.

Knowledge Tacit: Tacit knowledge is experiential know-how based on clues, hunches, instinct, and personal insights; distinct from formal, explicit knowledge.

Knowledge Topology: A framework that segments knowledge management into four key categories: Intermediation, Externalisation, Internalisation and Cognition.

Knowledge Transfer: The action and flow by which largely tacit knowledge is transmitted among people.

Knowledge Use: The effective integration of knowledge by people or organisations. It is the result of understanding and application of knowledge and the knowledge gathering process.

Knowledge Value Chain: A sequence of knowledge processes including creation, organising, dissemination and use that create value from knowledge stocks.

Knowledge Worker: - A term coined by Peter Drucker to describe participants in an economy where knowledge and its manipulation are the commodity and the activity. Contrast this with the industrial age worker who was primarily required to produce a tangible object. Examples of knowledge workers include marketing analysts, engineers, product developers, resource planners, researchers, and legal counsellors. An employee whose role relies on his or her ability to find and use knowledge. A person who creates information and knowledge. An individual whose primary contribution is through the knowledge that he possesses. This contrasts with workers whose work is predominantly manual or following highly specified procedures with little scope for individual thought.

Knowledge-Based Systems: Unlike expert systems, Knowledge-based systems are focused on the knowledge the systems carry, rather than on the question of whether or not such knowledge constitutes expertise. These systems have explicit knowledge bases and some flexibility in the use of the knowledge.

Knowledge-Intensive Domains: Domains in which workers are surrounded by information sources, but have difficulty accessing the information they need when they need it. Workers in these domains rely on external information resources to augment their mental abilities to comprehend and solve complex problems. The problem for workers isn't the existence of information. It is that there is so much information available that relevant information is difficult to find when it is needed. Examples of knowledge-intensive domains include law, planning and design.

To help frame the Knowledge Management Strategy, a theoretical model has been adapted from that by Probst et al[17] to explain how organisational knowledge is created, crystallised and transferred.   This model regards knowledge management as a dynamic cycle that is in permanent evolution. The 'core knowledge management process' consists of seven steps, expanded from the more frequently used four (acquire/create; capture/store; share/distribute; apply/use) which have been applied for example in the Infosys Knowledge Management Maturity Model (Annexes 4 and 5).
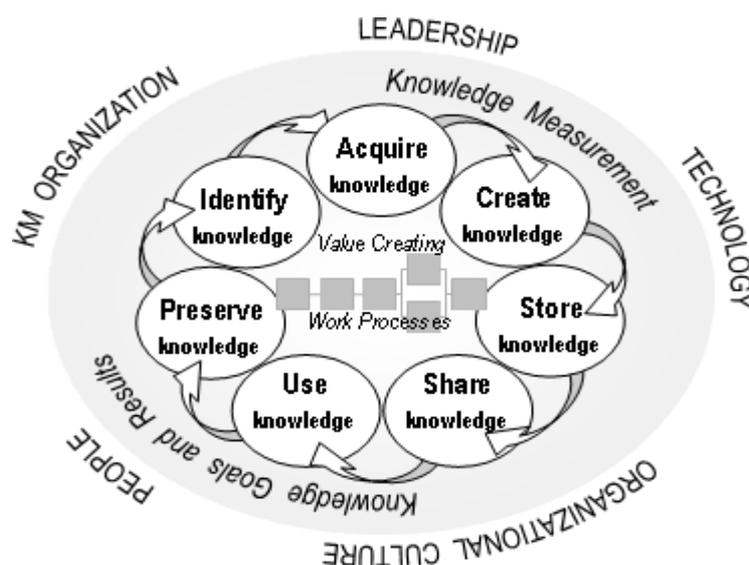
Figure 4: Theoretical model applicable to knowledge management in IUCN

Components of the core knowledge management process (or 'knowledge life-cycle')

Identification of the knowledge required to fulfil the mission

Acquisition of expertise (i) from outside through relationships with Members and partners in co-operative ventures; (ii) through learning from experience, sharing by colleagues, or formal education; (iii) through methods to elicit tacit knowledge.

Creation is the process through which new organisational knowledge is established. It includes creating connections between information, knowledge or ideas, and building cross-connections with other topics to form new knowledge.

Capturing and storing require an understanding of what to capture, as well as a structured storage capability that makes knowledge visible and accessible to others, facilitating sharing and use. The knowledge is stored in formalised knowledge repositories such as manuals, databases, reports, libraries, portals, etc.

Sharing and distribution are the processes through which knowledge present within the organisation is spread to others within and outside IUCN. This can be done by interaction between people, including mentoring, presentations and discussions, and through tools such as the Intranet and Internet. ICT tools only provide added value if trust and mutual understanding permeate the atmosphere across the organisation.

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[17] *Adapted from* Probst, G. (2002). *Managing knowledge. Building blocks for success.* West Sussex: Wiley.

Utilisation consists of carrying out activities to try to ensure that the knowledge created and present in IUCN is applied productively within and outside for the benefit of its mission.

Preservation is a process to ensure that the tacit and explicit knowledge embodied in documents, databases, publications, etc. and in the expertise of its people, and which is required for further work is retained within IUCN.

Strategic direction

Two additional processes provide direction to the whole cycle, ensuring alignment with the overall corporate strategy:

The (*desired*) *knowledge goals and results* determine what knowledge should be acquired, created, preserved, shared and used, and for what purpose.

Knowledge measurement using a well designed monitoring and evaluation system provides essential information for the strategic improvement of knowledge management.

Knowledge management enablers

These enablers – the way in which knowledge management is integrated into the organisational structure and processes, the leadership commitment, the organisational culture, the underpinning technology and the management of people as knowledge workers - provide an environment that fosters knowledge management.

It is unlikely that knowledge management will be successful if these aspects are neglected, and they should reflect the importance of knowledge in the organisational value creation.

Level 1:
"Knowledge, we've got plenty of – what we need is to work hard"

Level 2:
"We need to leverage all our knowledge, but we are too busy to do that"

Level 3:
"At least we have made a beginning in managing our knowledge"

Level 4:
"We've reached where we are by managing our knowledge well, and we intend to keep it that way"

Level 5:
"We're sharing our knowledge across the organisation, and we are proud of it"

Sharing

Convinced

Aware

Reactive

Default
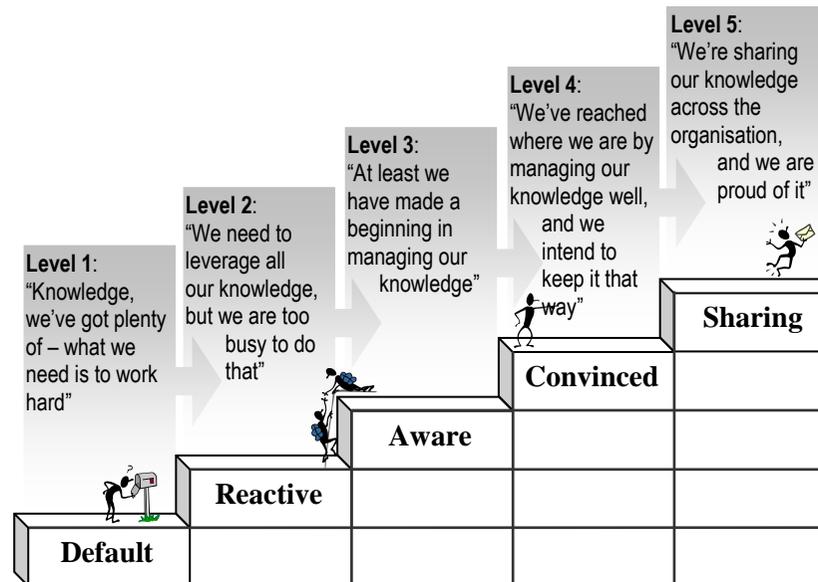
Figure 5: The five stages of the Infosys Knowledge Management Maturity Model

KNOWLEDGE MANAGEMENT MATURITY MODEL: DESCRIPTION OF THE ORGANISATION AT EACH LEVEL				
	Level 1: Default	**Level 2: Reactive**	**Level 3: Aware**	**Level 4: Convinced**	**Level 5: Sharing**

	Level 1: Default	**Level 2: Reactive**	**Level 3: Aware**	**Level 4: Convinced**	**Level 5: Sharing**
Organizational characteristics / behavior	• No KM awareness • Knowledge fragmented, isolated; mostly not captured	• KM awareness, but "others should do it" • Multiple databases; access difficult • Content management ad hoc; responsibilities dispersed • Scalability an issue • Knowledge integrity low; obsolescence high; organizational efficiency affected • Organizational barriers limit collaboration, learning and sharing	• KM roles defined • Basic knowledge infrastructure • Beginning of integrated approach to knowledge process; pilot KM projects established • Internal expertise leveraged, albeit sporadically • Work across organizational barriers • Knowledge structured • Content management defined and coordinated; efficiency increased • Quality assurance systems in place • Fledgling environmental scanning	• KM movement becoming self-sustaining • Knowledge processes scaled up • Quality, utility and use of knowledge is high • Standardization • Organizational barriers break down • KM planning is done; tight feedback loops, monitoring and evaluation • Environmental scanning well established • Respond to environmental change	• Culture of knowledge sharing institutionalized; sharing second nature to all • Organizational boundaries irrelevant • Continuous improvement in KM • KM decisions evidence-based • Adapt flexibly to change • Able to shape change • Knowledge leader
Knowledge acquisition	• Ad hoc learning	• Self-driven learning from field experience • Some mentored learning	• Structured learning from field experience • KM training programmes • Knowledge networks	• Tailor-made formal KM training • Learning based on field, internal and external expertise and networks	• Continuously evolving training • Learning culture established
Knowledge sharing	• Informal discussions	• Sharing ad hoc; in isolated pockets • External users of knowledge targeted in broad terms	• Occasional organization-wide sharing • Knowledge supply matches demand • External user audiences targeted with tailor-made products • Systems developed to increase access and potential for use of knowledge	• Organization-wide sharing systems, in place, become widely used • Knowledge mobilization driven by strategic assessment of demand as well as longer-term need* • Strategies to engage specific user audiences in needs identification and sharing	• Knowledge flows frictionlessly within organization, and to and from engaged user audiences
Knowledge utilization	• Accidental	• Sporadic	• Application and re-use for different purposes takes root	• Application and re-use for diverse purposes	• Large-scale, conviction-driven application and re-use
Virtual teamwork	• Non-existent	• Watertight partitioning; significant travel	• Happens, but significant coordination overheads • Environment supporting virtual teamwork available; usage patchy	• Truly virtual teamwork • Teams engage external audiences targeted for influence	• Cohesive teams including those targeted for influence

KNOWLEDGE MANAGEMENT MATURILITY MODEL: KEY RESULT AREAS AT EACH LEVEL				
	Level 2: REACTIVE	**Level 3: AWARE**	**Level 4: CONVINCED**	**Level 5: SHARING**
Content capture and sharing	*Content capture* • Ad hoc content capture • Knowledge isolated, fragmented • Integrity low	*Content structure management* • Content standardized, structured, categorized • Expertise directory; content has pointers to people • Integrity high; increased use • Coordinated content management process defined	*Content enlivenment* • Content logically and physically integrated – website, repositories, library, intranet, etc. • Captured knowledge and expertise accessible, highly used in content application / use. • Collaborative teams, knowledge networks are vehicles for sharing and knowledge application / use • High level of synchronization between knowledge entering repositories and their use – content grows in areas of high demand	*Expertise integration for knowledge creation/acquisition/value addition/re-use* • True sharing. Captured content and expertise easily accessible and available as integrated packet for knowledge creation, sharing and dissemination. Sharing is mix of direct person-to-person, as well as captured, stored and delivered knowledge. Knowledge creation, sharing, application, re-use across organizational barriers
Technology	*Basic information management* • Rudimentary knowledge capture systems; development ad hoc • Formats diverse, fragmenting content • Tools for managing knowledge life-cycle activities used disparately	*Knowledge technology infrastructure* • Basic knowledge infrastructure, including Intranet portal for content and experts • Organization-wide systems for knowledge capture and sharing exist, but underutilized • Technologies supporting virtual teamwork and knowledge networks exist, but underutilized due to lack of integration with work, mindset or technical issues	*Knowledge infrastructure management* • Organization-wide systems for knowledge capture and sharing are widely used • Technology is integrated, seamless • Integrated working environment support virtual teamwork, knowledge networks; highly used	
KM integration	*Knowledge awareness* • Awareness of knowledge as a resource; too busy to focus • Intranet administrator exists • Leadership recognizes KM need	*Central knowledge organization* • Dedicated knowledge management group with defined roles • KM part of responsibilities across organization • Human resource needs analyzed and addressed	*KM performance measurement* • KM performance monitored and benefits assessed • KM group's performance assessed • Links between KM and improved performance emerge	*Knowledge leverage* • Continuous improvement of core knowledge process • Contribution of knowledge management to improved performance measured; feedback loops tight; provides evidence-based KM decision-making
Learning	*Unstructured learning* Ad hoc learning from experience, work processes	*Knowledge education and learning* • KM training programmes and mentoring strategies • Knowledge networks learning and sharing from experience, (field) work processes, environmental scanning	*Customized enabling* • KM training and mentoring readily available • Knowledge networks drive learning, include internal experts and external audiences • Proactive response to environmental scanning and emergence of new ideas	*Innovation management* Organization has ability to assimilate, use and innovate based on internal and external ideas and knowledge. Processes exist for leveraging new ideas. Knowledge base considerations steer strategic knowledge application and re-use
Knowledge process		*Knowledge process pilot projects* • Integrated approach to managing knowledge core process • Pilot projects; analyzed for scalability	*Scaling up* • Pilot projects scaled up organization-wide	

Adapted from Infosys Technologies Limited (www.infosys.com)

	KMMM results expected for organization at Level 2	Indicative symptoms in IUCN
Process	**Content capture** ☐ Indispensable knowledge for performing routine tasks is documented, but not easily accessible, and in different formats.	■ Much of IUCN's knowledge has been documented and captured on information systems - Intranet, many websites and other database driven repositories, in different formats, with little or no standardization. Lack of synergies and linkages in system decreases accessibility of knowledge dramatically. For example difficult to find out what IUCN has done in key thematic areas such as poverty; what its engagement with a particular partner is, what Secretariat, Commission and Member expertise is available in certain area in region, etc – in spite of critical nature of this type of information for planning and strategic development of knowledge base
	☐ No consistent policies, guidelines.	■ No consistent policies and guidelines for capture of knowledge across on Intranet. Website content not standardized. Formats across websites differ, including branding and content
	☐ Integrity of data and information is low; obsolescence is high.	■ Integrity of information on Intranet is low and often outdated. Website information more reliable and updated, but formats are not consistent
	☐ Responsibility dispersed throughout the organization	■ Intranet content capture responsibility dispersed, not centrally coordinated
People	☐ Awareness exists of knowledge as a resource that must be managed explicitly (however, the 'someone-else-should-do-it' attitude prevails).	■ Awareness of importance of knowledge management across Union. Efforts have been made to improve knowledge management, but not systematically and formally. Many Secretariat staff admit to an interest in KM, but have little time to explore new avenues.
	☐ Awareness exists of what knowledge is appropriate for sharing internally or externally.	■ Less relevant in an organization not focused on competitive knowledge production. In spite of this, intellectual property matters require attention.
	☐ An "intranet administrator" role is established.	■ Intranet administrator role exists. Information Management Group under-resourced and under-staffed; role cannot be fulfilled effectively
	☐ Leadership recognizes need for formal knowledge management	■ Leadership has recognized need for formal knowledge management
Technology	☐ Rudimentary (data and information recording) systems are in existence, but formats are diverse, fragmenting available data and information.	■ Information systems exist but are not integrated and often not linked. Technologies not developed in synergy to capitalize on what is available, in use, and develop common approaches. Informal studies have shown very significant level of fragmentation of information across systems
	☐ Tools for managing knowledge lifecycle activities exist but are used disparately.	■ Knowledge capture and dissemination systems exist, but not used optimally, with fragmented development
	☐ Development of systems ad hoc; not user-focused.	■ Intranet perceived as user-unfriendly; development ad hoc due to persistent lack of funding in past

	KMMM results expected for organization at Level 3	Indicative symptoms in IUCN
Process	☐ Knowledge is structured. Integrated logical content architecture and taxonomy of knowledge topics exist	■ Knowledge is not structured except in isolated cases. In spite of past attempts, no organization-wide content architecture or taxonomy systems exist; basic topic classification system for Commissions database; thematic classification in others
	☐ Content management is defined and coordinated. Standard ways of capturing content are defined. Content management process is owned by central unit. ☐ Integrity of captured information is high. Regularly updated	■ Content management system has been defined in the past; not applied or coordinated at present. Little standardization in ways of capturing. ■ Integrity of captured information is low; obsolescence is high
	☐ Knowledge content augmented by pointers to people - sporadically used	■ Contact database available on Intranet; no comprehensive "yellow pages" for Secretariat or Commissions
	☐ Integrated approach to knowledge lifecycle is beginning to take root	■ Integrated approach to knowledge lifecycle is to some extent reflected in project and programme planning as knowledge is acquired/created, captured, shared, re-used and disseminated. Programme design and execution provides some standard approaches. Reviews have shown that processes can be improved in a number of aspects.
	☐ Fledgling environmental scanning exists and information is disseminated for use across organisation; ability to	■ Situation analyses inform programme planning. Broader strategic environmental scanning not done on systematic basis. Dependence on networks of experts (Members, Commissions and staff) with "ear on the ground".

	respond to environmental change moderately high	
	☐ KM pilot projects monitored and analysed for scalability	■ Isolated efforts to streamline knowledge management exist; major initiatives at pilot stage include the Commissions' SIS, PALNet and WCLN. Some specific KM foci exist in regions, with prominent efforts in ARO, SUR and IUCN Canada. Few attempts to structure projects or initiatives with strong purpose to improve knowledge management aspects and serve as examples. Purposeful KM pilot projects essentially not yet launched on systematic basis; generally not monitored in coordinated way for scaling up and providing lessons to relevant initiatives across IUCN.
	☐ Collaboration intensified across organizational boundaries as barriers are removed and incentives provided.	■ Significant programme work has been done across organizational boundaries, and crosscutting initiatives are being launched to stimulate collaboration. Yet recent reviews have found that the organizational silos remain one of the Union's greatest barriers to better performance. As yet no systematic effort to identify and address organizational and cultural issues preventing collaboration. Also sometimes inadequate integration between organizational units, or between programmes and organizational units; weakening vision towards common purpose.
	☐ KM group's progress is planned and monitored ☐ Monitoring and evaluation systems focus on KM; organization is able to see link between KM processes and results.	■ No systematic attempt as yet to monitor and evaluate knowledge management initiatives (in absence of structured KM programme). KM issues only occasionally systematically and explicitly integrated into monitoring and evaluation of projects, programmes and strategic reviews. Where these are available, results are not integrated and disseminated on wider scale for organizational KM lessons.
	☐ Knowledge provided in line with identified need and demand	■ IUCN has done extremely well in providing much-needed knowledge within and to a lesser extent outside the conservation community. KEG strategy clearly frames approach to knowledge generation and use. However reviews and discussions have pointed out on one hand a tendency towards supply driven knowledge products (especially among Commissions); on other hand much of work in Regions driven by (short-term) government or donor demand. Funding model of IUCN exacerbates the situation. Significant concern is that this prevents efforts from being more focused, targeted at longer-term interests towards major change. Critical issue for conservation movement, as recent debates have shown - concern that with all the effort too little is being achieved. Agenda-setting work towards major change has been less than desired, and depends on capacity to identify emerging issues and work within frameworks such as that of "social learning and change"[18], where relationships and creating common vision between disparate parties are critical. IUCN ideally positioned for this type of work, and has been successful – but more focus on this is needed. Also lack of clarity on what knowledge IUCN already has – anecdote indicates wheels are often reinvented, leading to unnecessary creation of knowledge. Exacerbated by lack of organizational learning and visible explicit knowledge base.
	☐ Capacity to target and disseminate appropriate knowledge products at clearly identified audiences	■ IUCN has been quite successful in its targeting of audiences, but some weaknesses persist with lack of focus on issue, as indicated in 2004 Review of the IUCN Commissions for example. Dissemination and influencing strategies have not had high profile in work of IUCN. Audiences are normally broadly defined and products therefore often not tailor-made to suit specific needs with clear understanding of the target audience. Capacities and to understand values and needs of audiences through establishment of close relationships not optimally developed. Dissemination of products not optimal – content on website not standardized formats, repository and library content spread across many parts of IUCN. Library content not digitized and organized for access.
People	☐ Dedicated KM group with well defined roles exists.	■ Not yet established. Information Management Group exists, but understaffed. Special Adviser appointed; roles to be integrated across organization, and steered by task teams. In some regions key people have played dynamic role in taking knowledge management forward, in particular in IUCN Canada, SUR and ARO Pakistan, but in uncoordinated fashion.
	☐ KM is part of management, staff and volunteer roles and responsibilities across the organisation.	■ Implicit in work of Secretariat and Commissions, but only handful of Secretariat staff have KM responsibilities explicit in terms of reference; mostly linked to Intranet content management.
	☐ Structured on-the-job learning takes place ☐ Growing number of active knowledge networks ☐ Formal training ("push and proactive "pull") in KM is provided.	■ A number of learning initiatives exist, but IUCN does not have a "learning culture". Anecdote indicates lack of clear results from those learning activities that do exist. This is weakened by lack of focus on establishing successful learning mechanisms in projects and programmes, supported by knowledge networks that can give impetus to learning efforts. Few have been established with this specific purpose, and numbers of networks have not been increasing significantly. ■ A significant body of knowledge on effective learning in IUCN has not been

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		established, for example to highlight successful approaches or storytelling and future storytelling; impact of cultural differences on learning approaches, etc. Major initiatives such as WANI, PALNet and CEC mainly through WCLN, and a number of regional initiatives provide different and sometimes novel approaches to learning, yet are not monitored for organizational lessons, synergetic development and optimizing opportunities. ■ Very little, if any, formal training in knowledge management issues is available, and policies to stimulate access of staff to training programmes have not been designed.
Technology	☐ Basic technology infrastructure established. Single-point access to internal knowledge exists (knowledge not integrated – only access available), usually through Intranet portal.	■ Basic technology infrastructure exists, including an Intranet. IT backbone needs upgrading; managed in crisis mode. Improvement needed in connectivity. System-wide procedures and standards for infrastructure management not developed; risk of intellectual property loss due to data back-up procedures. Intranet exists but has been under-resourced. Needs improvement to become user-friendly and a one-stop service / portal for staff with limited access by Commissions and Members.
	☐ Integrated systems for knowledge capture exist	■ Systems have been developed in isolation, with little synergy in conceptualization and technological or content design of repositories, website, Intranet, etc. No integration between systems except through web linkages (and these are not always systematic) with repositories within offices not linked to a broader system. Idea is not to promote conformity and integration at all cost, but where it can cut costs and increase efficiency and effectiveness.
	☐ Environments supporting virtual teamwork and networks are available, although usage is patchy.	■ Interactive spaces for collaboration and knowledge networks have not been created in systematic manner; programmes have created their own where necessary. Should be available on the Intranet. Cost-effective technologies such as free Internet based telephony and videoconferencing have not been embraced.