

Internal Programmes which inspire, reward and promote innovation



Talk to the WRI Summit, December 2001  
Nick Brooks, Shell Internet Works

## **SLIDE 1**

### **Shell in the world**

Use this slide while you are 'settling in' - thanking the Chairman for giving you the opportunity to speak, giving a brief outline of your own background or giving the outline framework of your presentation.

Shell's pecten symbol can be found in over 130 countries world-wide. Shell companies find, produce, transport, refine and sell oil, gas and petrochemicals. Some are involved in mining, transporting and selling coal, as well as renewable energy businesses and forestry. Shell is a group of locally-based companies, serving their customers. The common features are:

- A degree of ownership by an alliance between two Parent Companies - Royal Dutch Petroleum Company and The "Shell" Transport and Trading Company
- The same set of business principles - published for all to see
- A commitment to health, safety and the environment.

There are over 1,700 active companies in the Shell Group, most of which are connected to one of five business areas:

- Exploration and Production
- Oil Products
- Chemicals
- Downstream Gas and Power Generation Renewables.



## SLIDE 8

### Who we are and what we do

Shell generates its returns to shareholders predominantly from five core businesses:

- Exploration and Production
- Oil Products
- Downstream Gas and Power Generation
- Chemicals
- Renewables

Our activities include Exploration and Production, Transport, Manufacturing, Distribution and Marketing, and finally – providing energy, chemical and other products to customers.

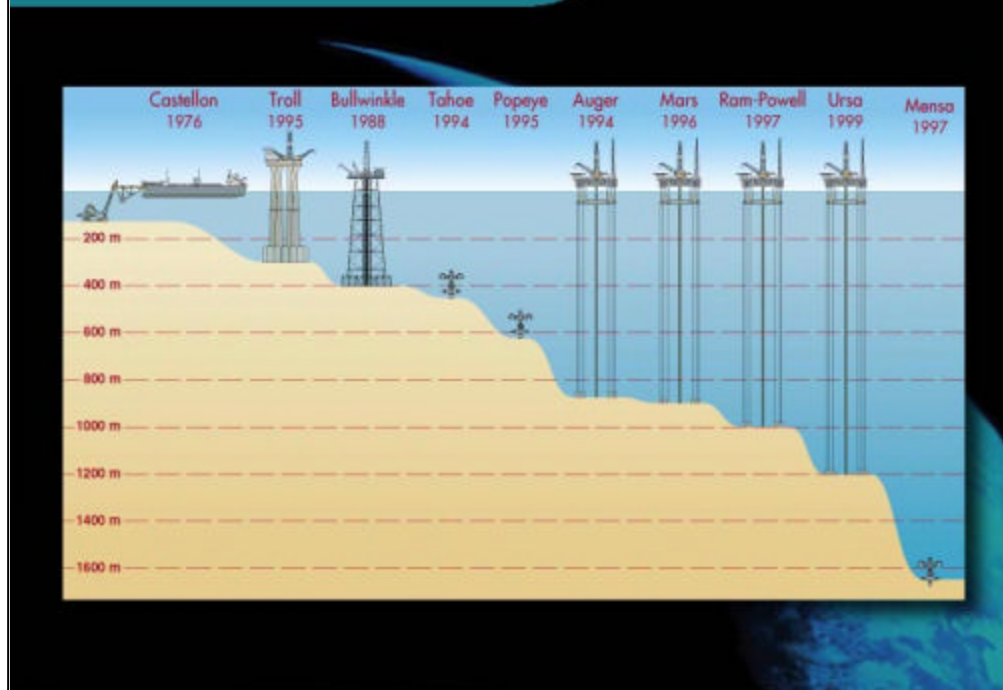
**Production:** We search for oil and gas fields, develop and drill wells, and build the infrastructure to deliver hydrocarbons to market. We also cultivate sustainable forests, convert wood fuel into energy products and develop wind energy products.

**Transport:** We transport raw materials by ship, rail, road and pipeline.

**Manufacturing:** We refine oil and gas into liquefied petroleum gas, transportation fuels, heating and fuel oils, lubricants and bitumen. Hydrocarbons are processed into the chemical precursors of products (for example plastics and detergents) and catalysts are supplied to the oil refining and petrochemical industries. We manufacture solar panels and associated electrical systems.

**Distribution and Marketing:** And finally, we distribute and market our products to you, the customer.

## Oil and gas production



### SLIDE 12

#### Oil and gas production

With 70% of the world's surface covered by oceans, it is hardly surprising that oil exploration and production is increasingly offshore.

Technology means that the search can go to greater and greater depths. The first offshore rig was in the Gulf of Mexico in waters just six metres deep. Exploration is now seeking oil 2,000 metres underwater. And production, using 'tension leg' rigs (tethered but floating, rather than standing on the bottom), has been successful in waters as deep as 1,600 metres.

Even with computer and satellite assisted surveying, there is still a need for skill and a bit of luck. Shell drilled 66 exploration wells in 1998. Only 26 of them were productive. When you bear in mind that the success rate used to be well under 50%, it is a measure of the level of expertise Shell brings to surveying. To put 26 new wells into perspective, Shell has interests in over 36,000 oil and gas wells

Exploration is important for another reason. It is the process that first takes Shell companies to an area. It may therefore be the first movement of developed technology into a country, with implications both for the communities already there and the environment. Shell is sensitive to the potential problems this may create and takes a considered approach wherever it operates.

## Renewables – our fifth core business

Shell Renewables  
is looking to the future of  
global energy  
and developing a  
portfolio of renewable  
resource businesses  
encompassing Solar,  
Forestry, Biomass and  
Wind



### SLIDE 41

#### Renewables - our fifth core business

The 21st century is likely to see the advent of a solar-hydrogen economy that will be far more efficient, decentralised and less polluting than the fossil fuel system that so dominated the 20th century. Solar power and wind energy are the fastest-growing energy sources, averaging annual growth rates of 16% and 25% respectively in the last decade.

Shell established its fifth core business, Renewables, in 1997 to look to the future of global energy. The aim of the company is to commercialise renewable resources in a way that is both profitable and helps promote sustainable development.

The business areas encompassed by Shell Renewables are:

- Solar
- Wind
- Biomass
- Forestry
- Hydrogen

Capita investment in 1999 for Renewables amounted to US\$ 67 million, and capital employed at the end of 1999 was US\$ 306 million.

## Bringing power to the people



Shell and Eskom in South Africa have jointly developed a rural electrification programme that will be a blueprint for similar ventures around the world

### SLIDE 42

#### Bringing power to the people

To meet the development needs of a growing world requires increased supplies of energy. The World Bank estimates that two billion people world-wide live without basic amenities, including access to electricity. In less-developed countries extension of the national grid is often difficult and financially unjustifiable. Instead, people rely on other forms of energy such as candles, batteries, wood and paraffin. These products can be expensive and inefficient - and most significantly, they have a negative impact on the health and safety of the users and the environment.

Shell is operating a joint venture with Eskom in South Africa in which they have developed a rural electrification programme on a fully commercial basis. Fifty thousand homes in the Eastern Cape will receive electricity through our unique Powerhouse\* Solar Home System. The system will provide electricity for lamps, radios and televisions at a cost per installation of only \$8 dollars a month - roughly the same amount currently spent on household candles and paraffin. It is the first commercial rural electrification project of its kind, and we see it as a blueprint for other areas in the world.

## Sustainable development

Sustainable development:  
"Development that meets the needs of the present,  
without compromising the ability of future  
generations to meet their own needs"



### SLIDE 44

#### Sustainable development

What is sustainable development? We speak about sustainable energy, a sustainable future and sustainable projects. But what exactly do we mean?

Sustainable development means creating a good quality of life today, without selfishly spoiling the world for the future. It means achieving growth and advances that do not destroy the earth's resources nor damage social harmony or the environment. It was defined in a report to the World Commission on Environment and Development in 1987 as:

'Development that meets the needs of the present, without compromising the ability of future generations to meet their own needs'. It has three inter-linked elements - economic, social and environmental - and sustainability cannot be achieved by pursuing one without the others.

The concept came to the fore in the 1980s when the United Nations examined some of the world's biggest problems - poverty, overpopulation, famine, drought, deforestation and potential climate change. In 1992 it became a global priority when, at the major 'Earth Summit' in Rio de Janeiro, world leaders committed to making future development sustainable.

Shell also made a commitment to sustainable development at the highest corporate level - a commitment that led to a group-wide process of transformation. The process has gathered pace to the extent that nobody at Shell is unaware of the issues involved and the contribution each of us can make.

## **Changing focus of innovation**

- **Growth is the result of the continual recombination of the basic building blocks (Drucker)**
- **In the 20<sup>th</sup> century this was carried out by applying physical leverage to recombine building blocks**
  - **Eg carbon molecules to create gasoline**
- **Now innovation is as likely to come from the application of and leverage from intellectual networks to recombine idea building blocks to create new usable forms**
- **The speed of people hearing about these new building blocks has increased exponentially, therefore the speed of innovation is also increasing exponentially**

## Group GameChanger

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## Group GameChanger's Role

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✍ Identifies and nurtures ideas that may be the "next big thing" for Shell and that do not find a home within the existing Business GameChanger portfolios: Group Innovation Strategy

✍ Act as an Angel Investor for juvenile X-business ideas  
(Beyond scope and time horizon existing Shell businesses)

✍ Provide Shell with a portfolio of options for the future

✍ Stimulate and nurture innovation across the Businesses

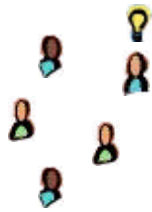
✍ Assist capability building,

✍ Facilitates the coalition

✍ Monitor progress and portfolio

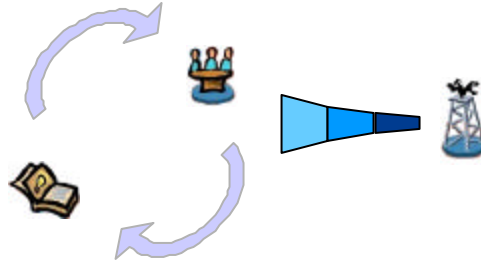


## Conceptual process



### Idea Creation

Any Shell Employee  
External Persons  
Spontaneous  
Directed (Workshops)  
Collaboration  
Data Mining  
IP Searches



### Idea Development / Review

Idea Owners  
GameChangerteams  
Shell & Outside experts  
Process Management  
Review & Collaborate

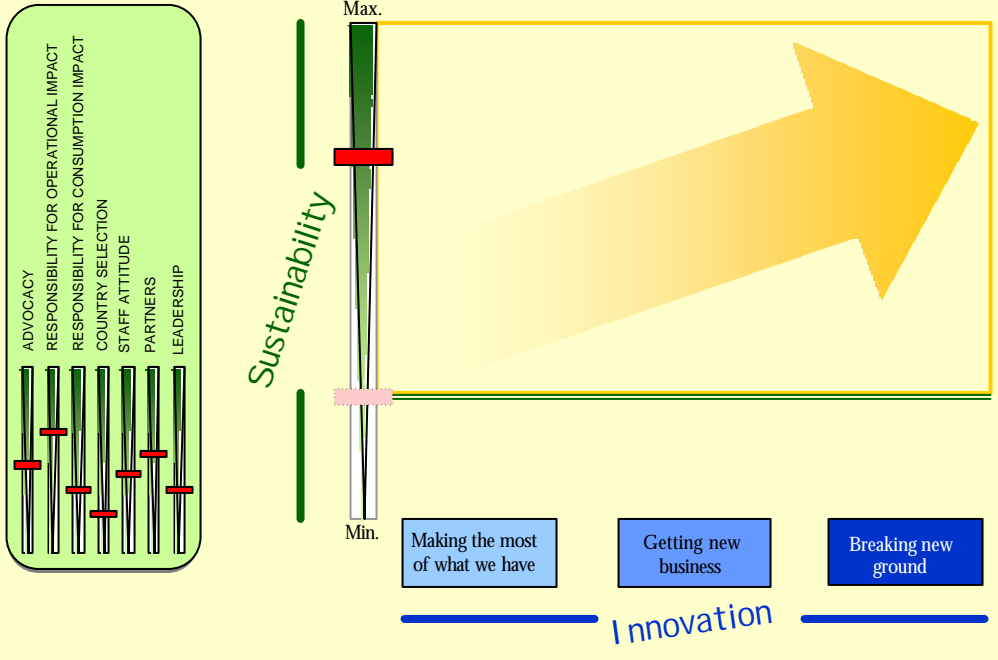
### Idea Maturation

Idea Owners  
Shell & External Teams  
Project Managers  
Process Management

### **Typical idea screening factors**

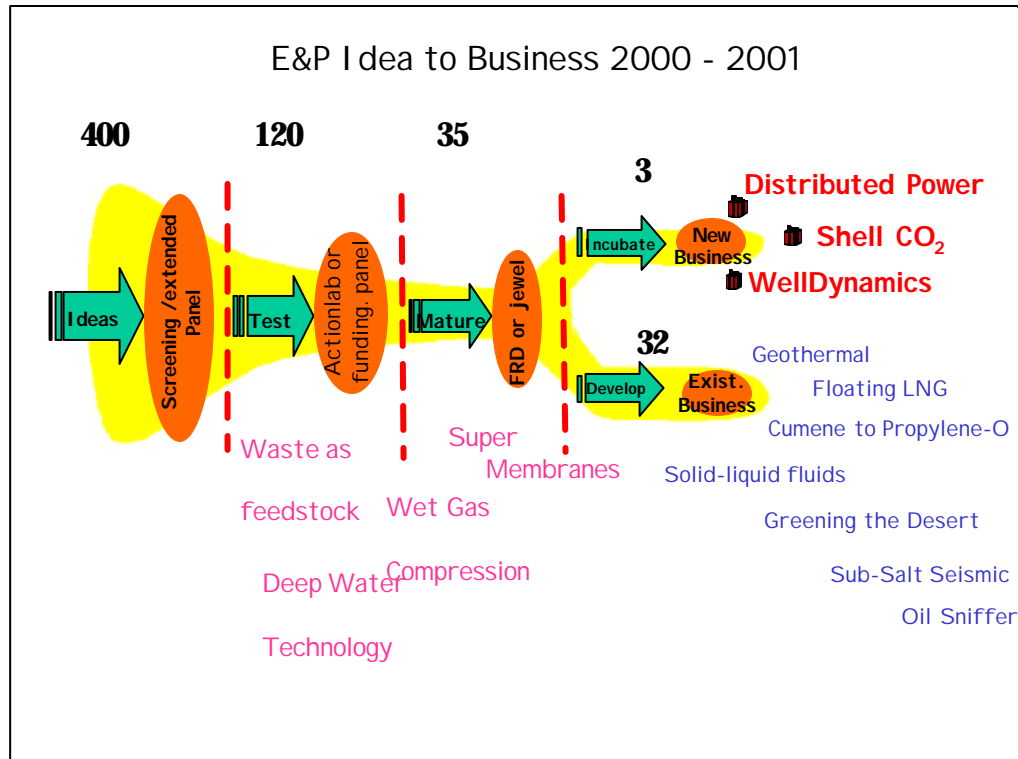
- Fit with Shell
- Value
- Competence
- Sustainability
- Uniqueness

Preference for new businesses which are role-models of Sustainable Development



### **Why do individuals participate?**

- An outlet for innate creativity
- Strong association between corporate values and personal creativity
- To expose personal insights to wider scrutiny
- Internationalising and networking the individual
- Financial recognition is secondary



In 2001 Group GameChanger generated two new businesses (less than 1 year between idea and business implementation!) being CO<sub>2</sub> trading taken up by SGS and distributed power taken up by Gas & Power. In 2000 EP GameChanger completed a bundle of Smart well technologies in a Jointed Venture with Halliburton called 'WellDynamics'. Also from EP is a floating LNG plant that will change the Game in Australian gas production. First plant being commissioned.

Promising projects for which a business plan is being generated:

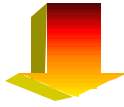
**MISR:** Modular Intensified Steam Reforming produces pure high-pressure streams of Hydrogen and Carbon Dioxide from hydrocarbons. MISR works with superior thermodynamic efficiency and is highly scalable. MISR enables a wide variety of business opportunities such as distributed power generation and CO<sub>2</sub> flooding of oil reservoirs. The ability to capture and sequester the CO<sub>2</sub> makes MISR highly desirable in a Carbon constrained future.

**Shell Water:** Builds a business around the entire water value chain, being: find (seismic), produce (drill), transport and treat (desalinate, re-use). Shallow seismic is piloted in Oman, small scale membrane purification in South Africa

**Alchemy:** based on principle that some ones waste is someone else's feedstock

## The Challenge

- ✍ **Filling the funnel**
- ✍ **Keeping up the flow of genuine GameChanging experiments**
- ✍ **Managing the volatile and over-demanded human resource pool to carry out the GameChanger experiments**



**200 GameChanger experiments year after year.....**

## “The Shell Way to Innovate”

- Speed and focus on implementation
- Grass roots approach
- Simple, effective, recognised process
- Relevant, business-oriented metrics
- Senior Management support
- Group of “Peers” holding the budget

\* If the expected profit delivered for each 100 proposals exceed \$15 million the process will pay for itself.

\* The current indication is that GameChanger will deliver more than \$35 in wealth creation potential for each \$1 invested through the incubation stage of the project maturation cycle.

**[slide 20]** To close, let me just summarise “The Shell way to innovate”.

Speed and focus on implementation – creating a sense of urgency, to build the momentum and keep it going all the way to market.

Building on what’s there already – letting our people realise their capacity to innovate, and to use their knowledge, skills and the technologies already in place.

A grass-roots approach – so that we tap properly the enormous innovation potential of our global organisation. In the first year alone of Game Changer, we had more than 300 proposals.

We keep the process simple, effective, and high profile, to make sure it’s recognised and understood around the organisation.

And we use relevant – i.e. business-oriented – metrics. That way, our minds can race at light speed through unexplored realms, but our feet stay firmly on the ground.

Game Changer is not something applied just in my part or the Shell business. The approach, the Shell way to innovate, is now becoming a norm in all our Shell businesses.

# Shell Livewire



A central content grid for Shell Livewire. At the top is the 'LIVE WIRE' logo with the tagline 'accelerating young business ideas'. Below it is a woman holding a megaphone with the text 'Loads of info to get you started'. The grid contains several colorful boxes: 'Latest business issues and advice', 'What's happening', 'Shell Livewire helps 16-20 year olds to start their business and face a national competition for new business ideas', 'Want to win £10,000', 'making the BIG TRIP?', and 'Register now for further help'. A person is shown falling into a pool in the background.

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