



# Oilfield chemicals

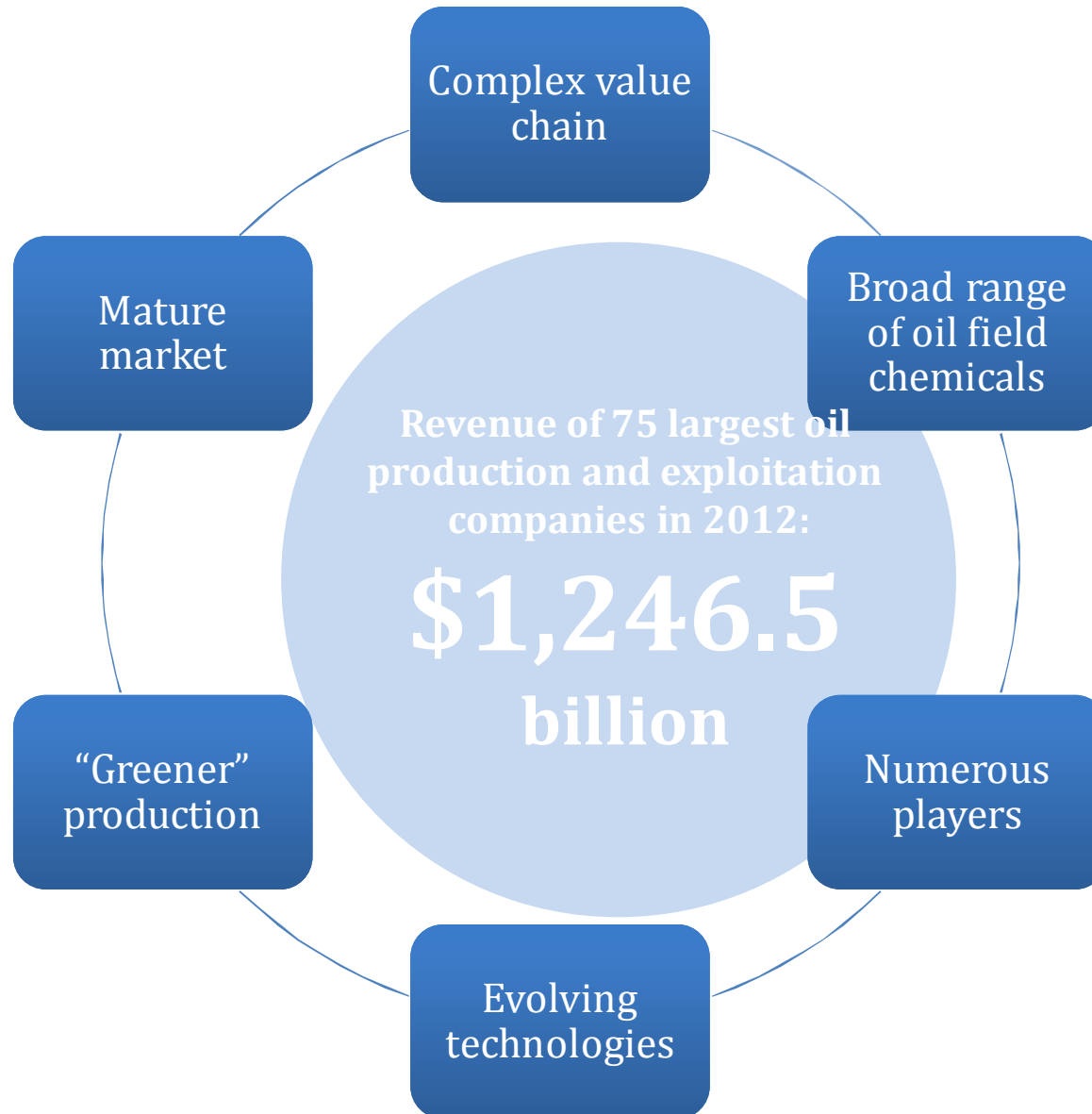
## Market Development Opportunities

Daydream & Dynovel  
Highlight

*Confidential document, 1 October 2014*

*Cologne, Shanghai, Philadelphia, 2014*

# What are the difficulties of working in the Oil & Gas production industry?



- **Improve products and technologies by:**
  - Extending your Product Portfolio
  - Adapting the chemicals portfolio to the constant changing technologies in the Oil & Gas exploration and production
  - Revisiting the oilfield chemicals requirements that might fit use your chemical intermediates features
- **Have quicker access to prospective customers by:**
  - Having direct connections to Blenders, Oilfield Services Companies, NOC or IOC companies
  - Improving your Channel-To-Market organization and design capabilities
  - Identifying the most suitable players to strategically partner with in the fields of oil and gas technologies
- **Support your strategy planning by:**
  - Developing your Production Assets and being able to estimate capacity
  - Having an updated understanding of your competitors activities in Asia, Europe, North America and South America



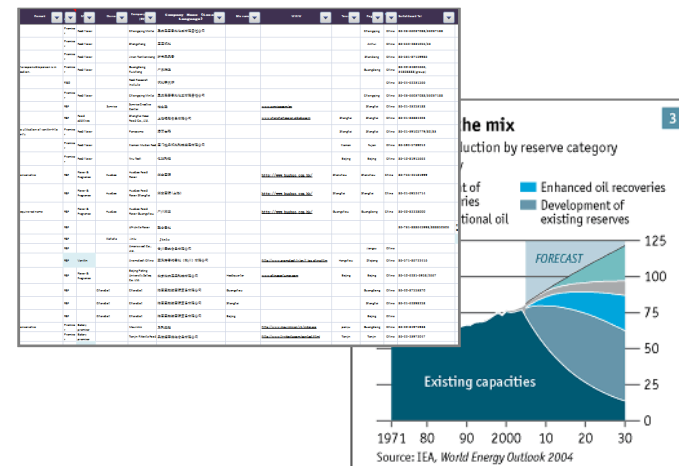
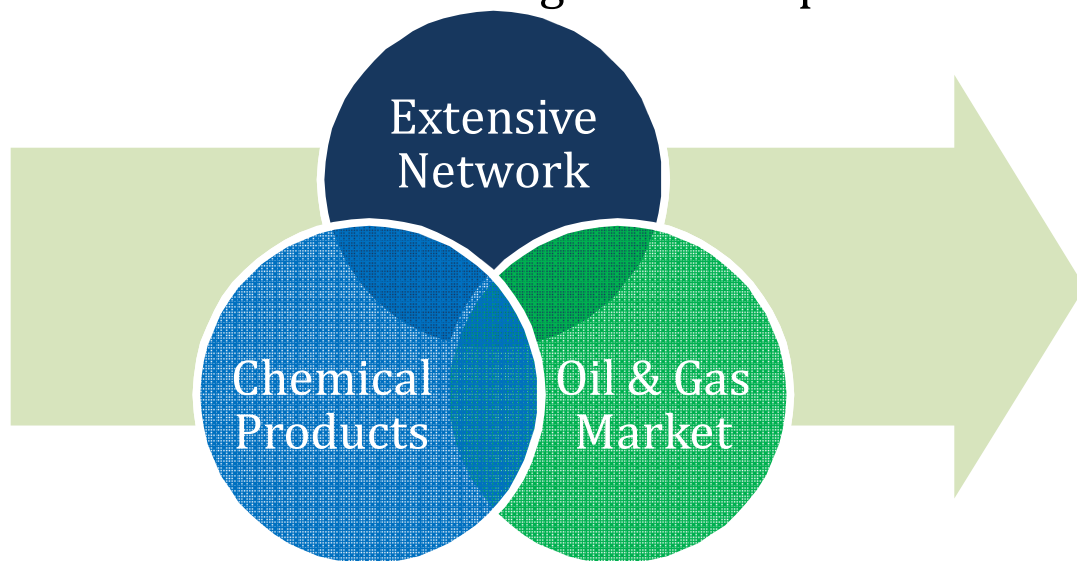
**Daydream provides a unique portfolio of Consulting Services  
to help you answer your questions.**

- **Support your growth activities by:**
  - Identifying new suppliers in expanding regions
  
- **Search for innovative technologies to meet your evolving needs by:**
  - Identifying green chemistries that can replace hazardous products
  - Sourcing new chemical products with innovative technical features (technology transfer to Oil & Gas)
  
- **Provide your In-field Services partners formulation support such as:**
  - Hydraulic fracturing formulations
  - Improved Oil Recovery
  - Enhanced Oil Recovery...



**Daydream provides a unique portfolio of Consulting Services and knowledge to help you to answer your questions.**

- **With 15 years of global projects in the Consulting Industry dealing with:**
  - A variety of chemicals products & technologies,
  - Combined with its deep understanding of the Oil & Gas market's structure & organization
  - As well as its extended network of experts and key industrial players
  
- **We have developed a strong expertise in the Oil & Gas Industry which enables us to build a global comprehensive master Database which:**
  - Is dedicated to this Industry and correlating key players/activity/chemicals/properties
  - Aims at facilitating the development of New Business opportunities for our clients.



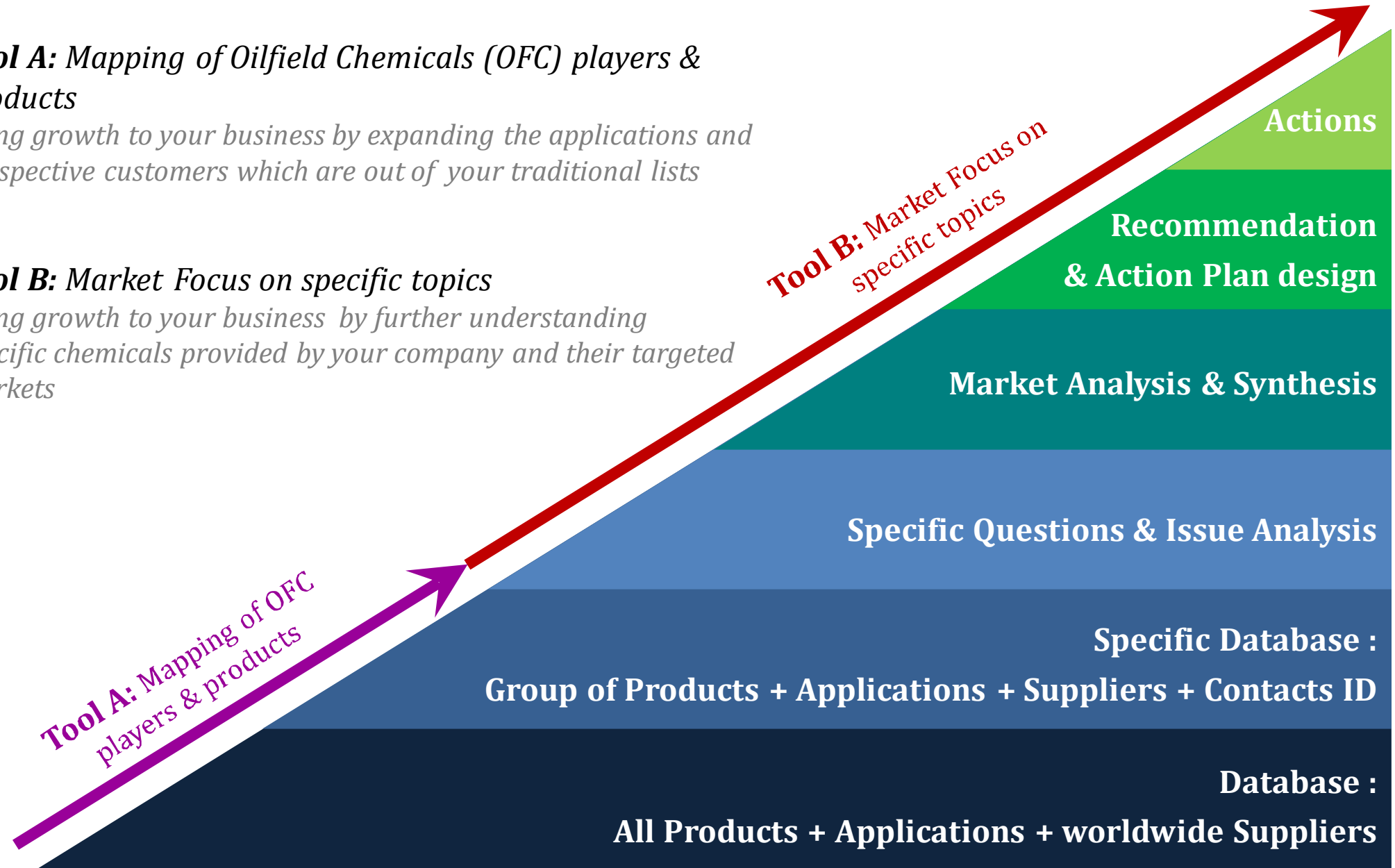


**Tool A: Mapping of Oilfield Chemicals (OFC) players & products**

*Bring growth to your business by expanding the applications and prospective customers which are out of your traditional lists*

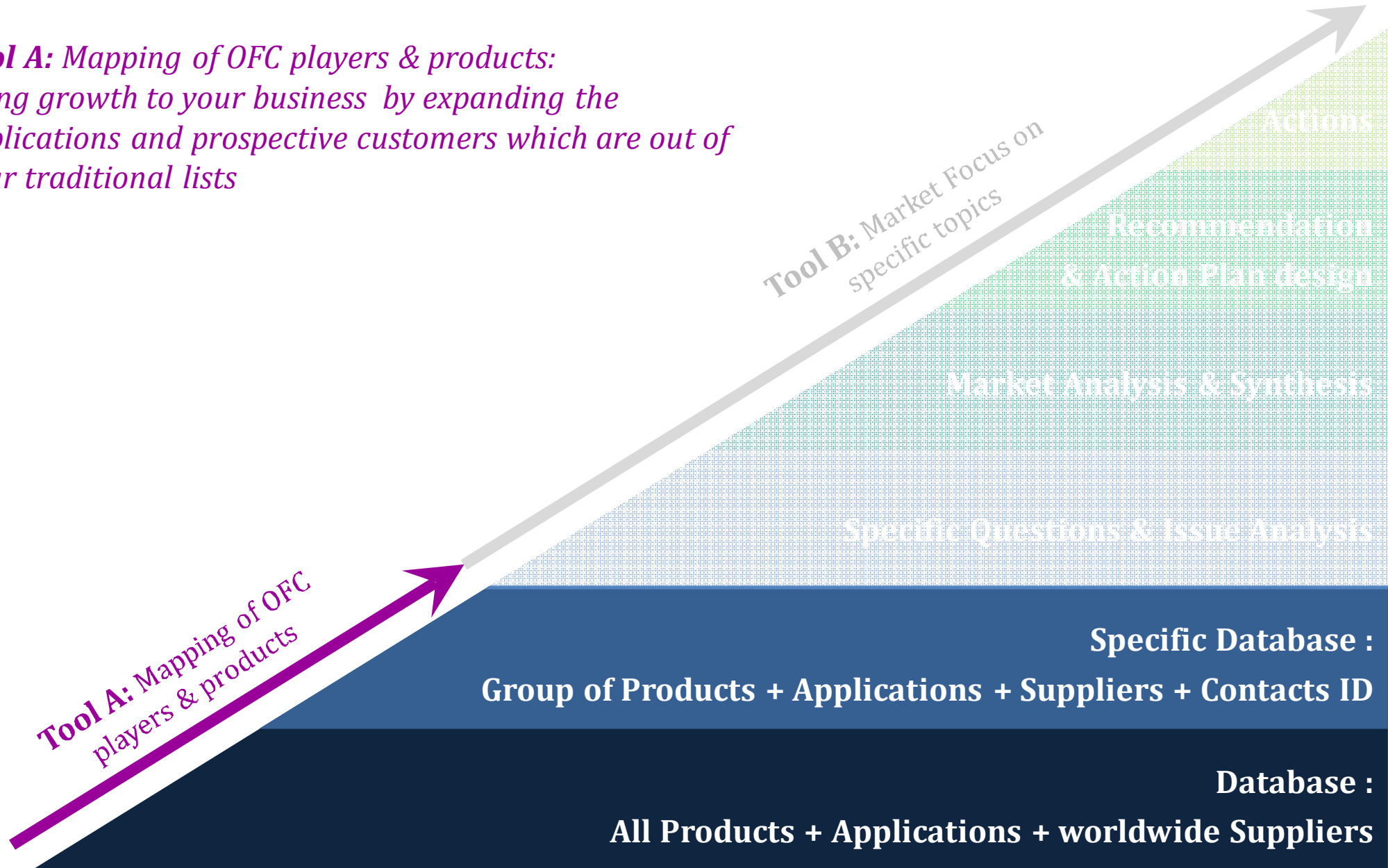
**Tool B: Market Focus on specific topics**

*Bring growth to your business by further understanding specific chemicals provided by your company and their targeted markets*



*Tool A: Mapping of OFC players & products:  
Bring growth to your business by expanding the  
applications and prospective customers which are out of  
your traditional lists*

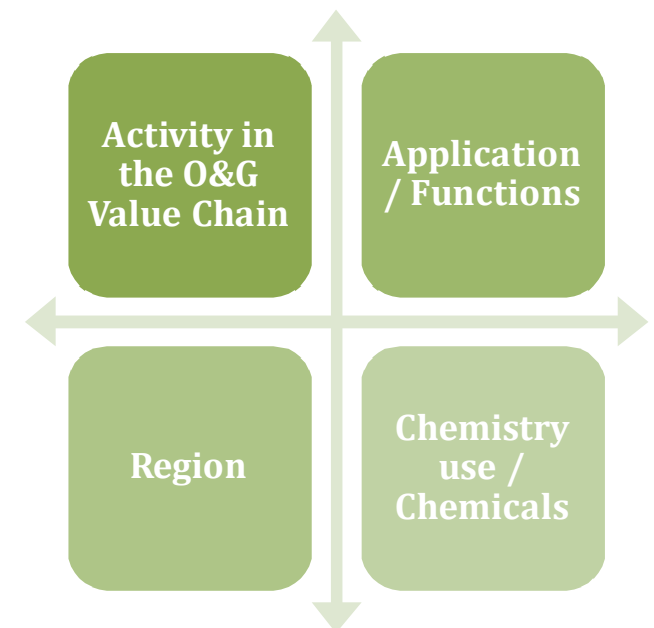
**Tool B: Market Focus on  
specific topics**



*There are dozens of functions and hundreds of types of OFC applied in all steps of Oil & Gas productions, how can you make sure that you have a full understanding about the positioning of your products in the value chain?*

- If you want to source specific chemicals for developing new formulations
- If you want to further understand the positioning of your competitors in the Value Chain
- If you want to identify a business opportunity for your product portfolio based on a function requested by the Oil & Gas market
- If you want to have an overview of who is operating and where

**We are able to build a tool which maps the Value Chain of the Oil & Gas industry as well as a comprehensive list of players segmented by Applications and/or Region in the Value Chain**

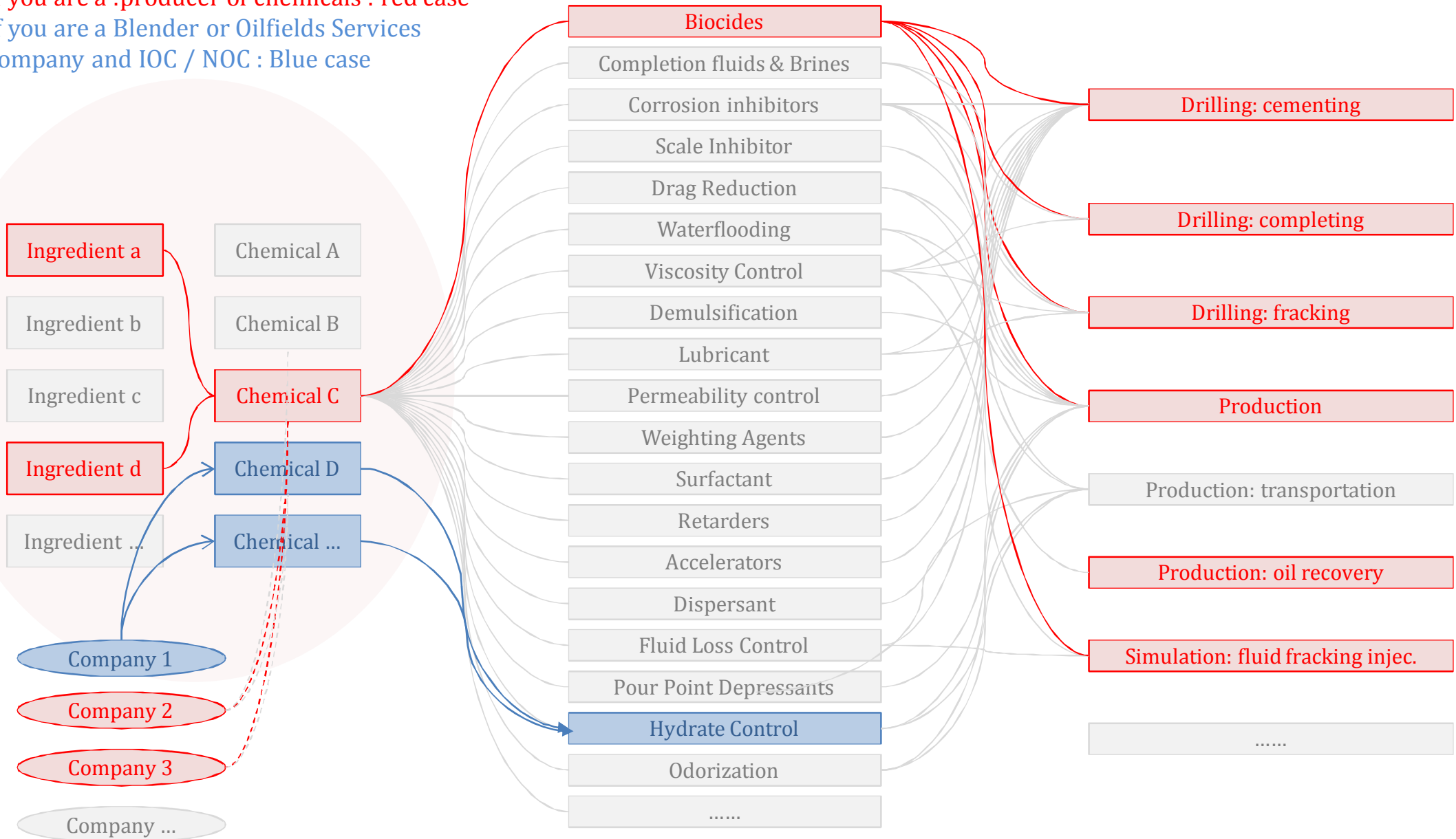




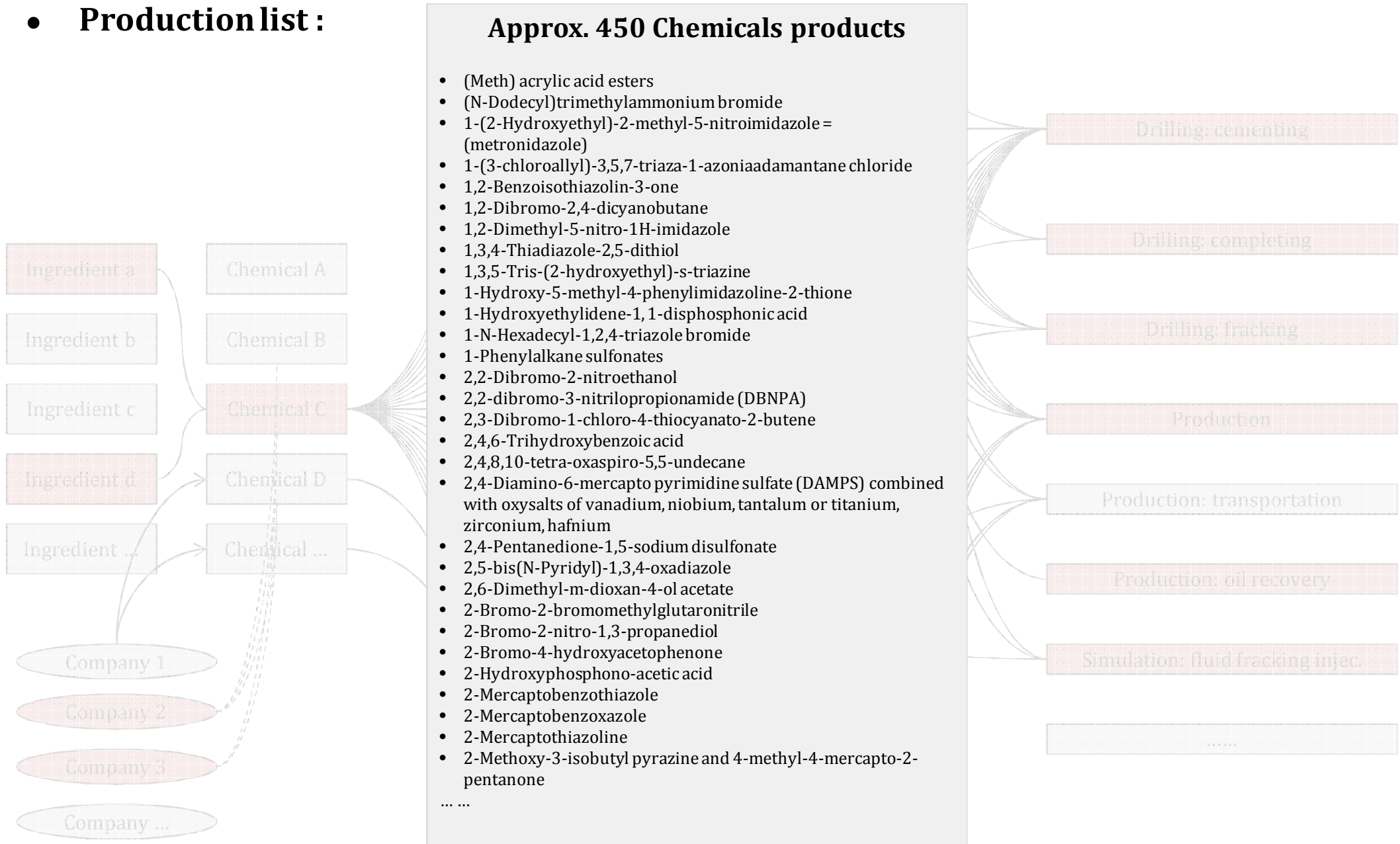
## Illustration: Global Model and link

If you are a :producer of chemicals : red case

If you are a Blender or Oilfields Services company and IOC / NOC : Blue case

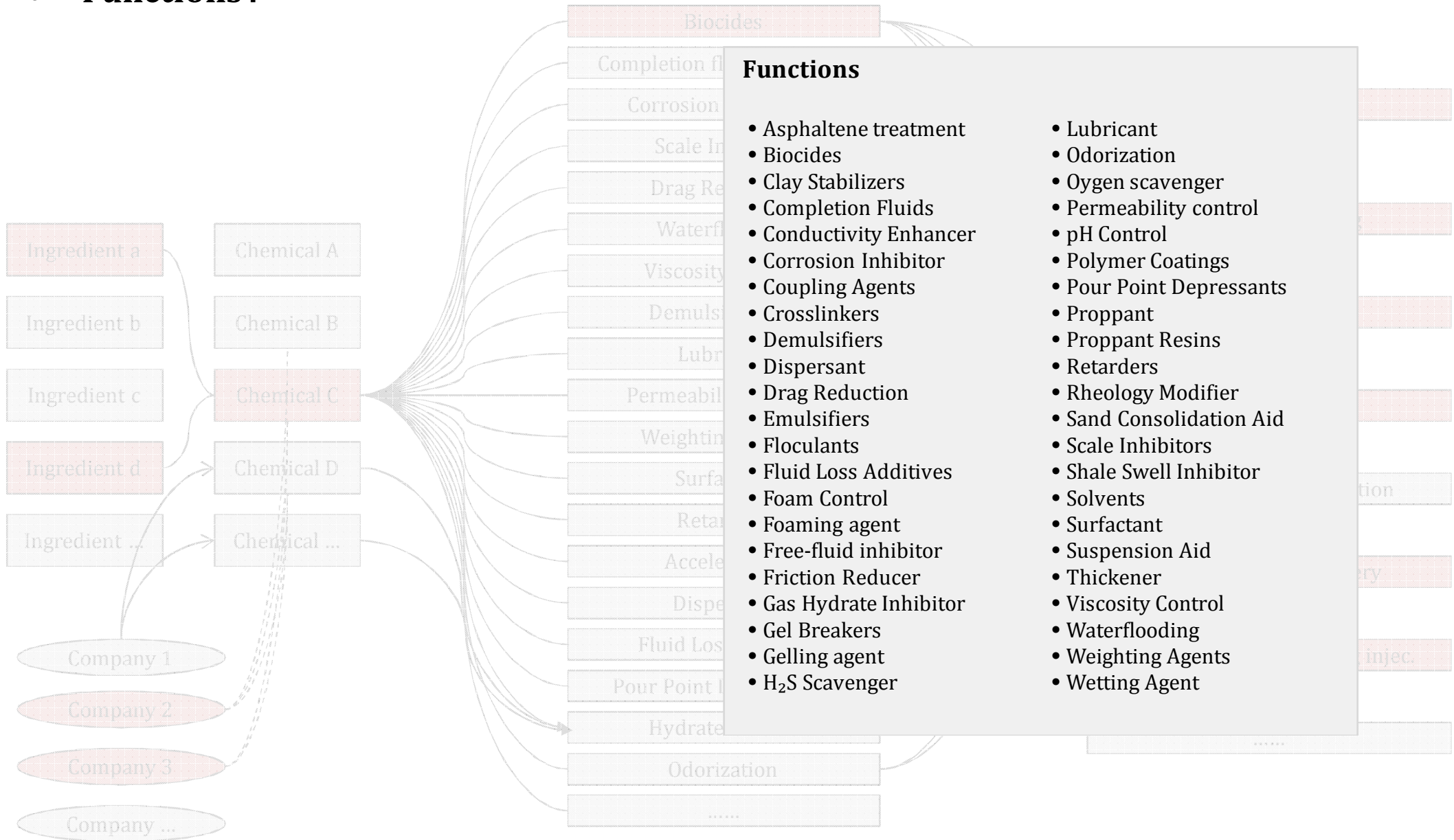


● **Production list :**



## List of functions

- Functions :**



- Companies and position in the Value Chain :**



- **Illustration of Mapping results :**

### Relation between Chemical Manufacturers, Chemicals Products, Functions and Application

Raw material or intermediate	Company	Chemical Product	Function	Application	O&G Segment
Bauxite	Saint-Gobain Proppants	Sintered Bauxite	Ceramic Proppants	Fracturing Fluids	Hydraulic fracturing
Phenol	Sanrol	Phenol Formaldehyde coating	Resin Coated Proppants	Fracturing Fluids	Hydraulic fracturing
Acrylamide	Sanrol	Polyacrylamide coating	Self Suspending Proppant	Fracturing Fluids	Hydraulic fracturing
Fatty alcohol	Sasol	Fatty alcohol Ethoxylates	Surfactants	Drilling Fluids	Stimulation & production

*Our research direction* 

### Relation between Oilfield Service companies and Value Chain Segment:

Oilfield Service company	O&G Segment	Proprietary Products/Technologies	Characteristic
Sanjel	Hydraulic fracturing	Fracturing Fluids	N <sub>2</sub> energized , Visco-Elastic Surfactant based fracturing fluid
Sanjel	Hydraulic fracturing	Fracturing Fluids	Borate based fracturing fluids
Sanjel	Canadian Oil Sand	Thermal Cementing	

*Our research direction* 



- **Example of data: Drilling Fluids**

- **Role:**

- Cool and lubricate the drill bit, increasing the rate of penetration during drilling
- Provides sufficient hydrostatic pressure to prevent the escape of gas and oil during drilling.
- Ensures the well remains clear by transporting rock cuttings to the surface and preventing rock dispersion.
- Prevents fluid and solid invasion into the rock formation.
- Stabilizes the well as it is being drilled, thereby avoiding damage to the production zone



- A mineral to control the weight/density of the mud.
- A bridging solid to encourage the formation of a filter cake within the well.
- Wetting and thickening agents to tailor the rheology of the mud.
- Salts to aid well stabilization particularly for shale formations – for oil-based muds these salts are contained in aqueous emulsion droplets.

\* For water-based Drilling Mud: other additives such as starches and polymers may also be used, for example to prevent fluid loss, particularly when drilling shale.

● **Example Drilling Fluids**

Chemicals/  
Ingredients suppliers



Drilling Mud or  
Fluids formulators



Drilling & Service  
Companies

Company name	Location	Chemistry / Raw material	Function	Contact name	Activity
...					
Dalian Xingyuan Chemistry	China	DBPNA	Biocide		
Deep South Chemical	USA	Thiocarbamate			
DOW Chemical	USA	Glutaraldehyde	Biocide		
...					
...					
MacLube Oil Co	USA				
M-I SWACO					
...					
...					
Anton Oilfield Services	China				
Baker Hughes	USA				
...					

ILLUSTRATION

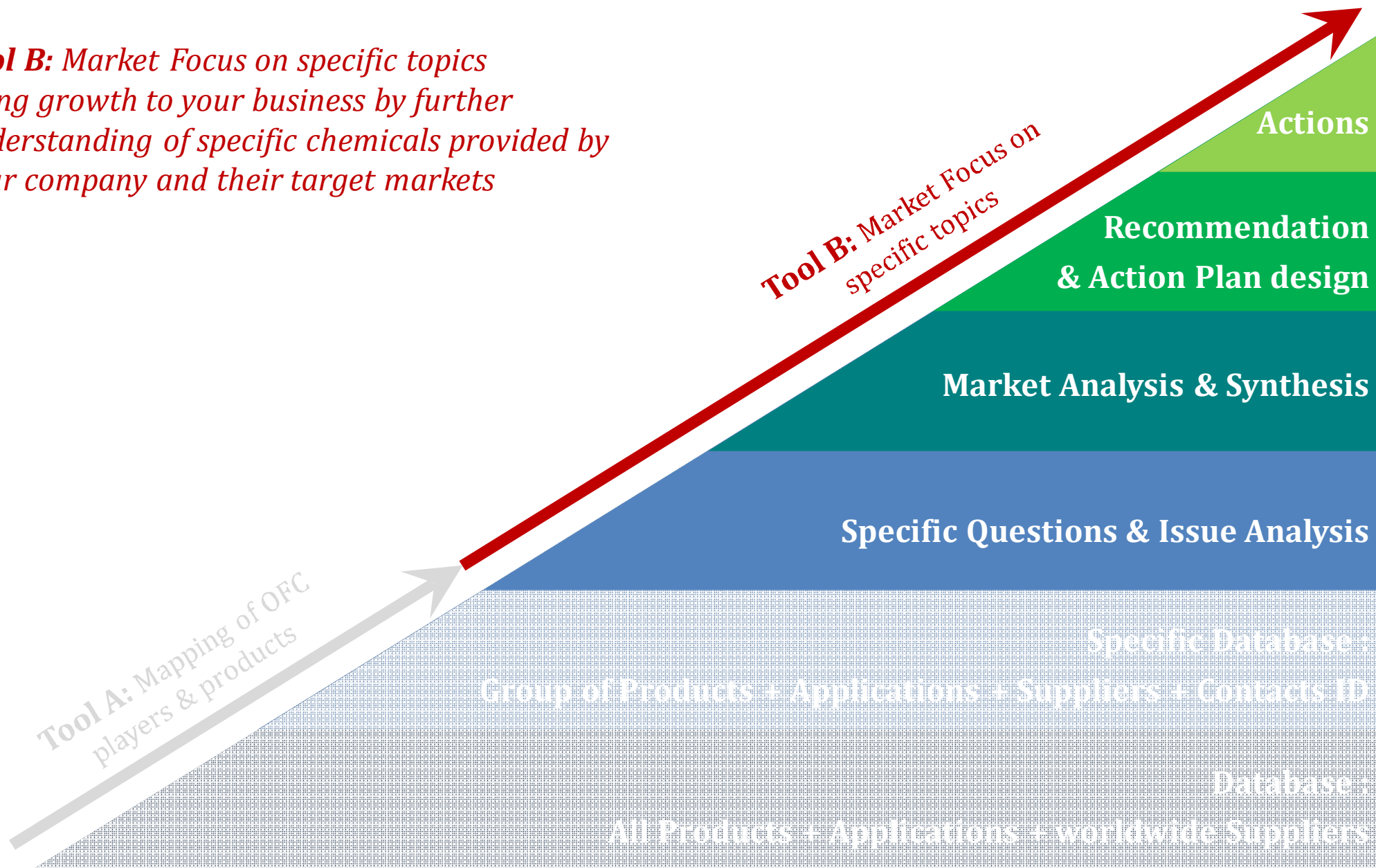
**Conclusion :** We are able to provide you with a comprehensive list (\*) of current players in every step of the Oil & Gas Production chain. Whether providing, formulating or buying every possible chemical involved in the process.

(\*) List illustration :

- Chemistry - Product - Function for Oilfield Chemicals
- Company - Raw material (sometimes) - Product/Function- Applications
- Chemical Manufacturer their Chemistries – Product - Function - Applications
- Oilfield Service Company - Application fields - O&G Segments + proprietary technologies - Innovations

***Tool B:** Market Focus on specific topics  
Bring growth to your business by further understanding of specific chemicals provided by your company and their target markets*

**Tool B:** Market Focus on specific topics



**Tool A:** Mapping of OFC players & products

Actions

Recommendation & Action Plan design

Market Analysis & Synthesis

Specific Questions & Issue Analysis

Specific Database:  
Group of Products + Applications + Suppliers + Contacts ID

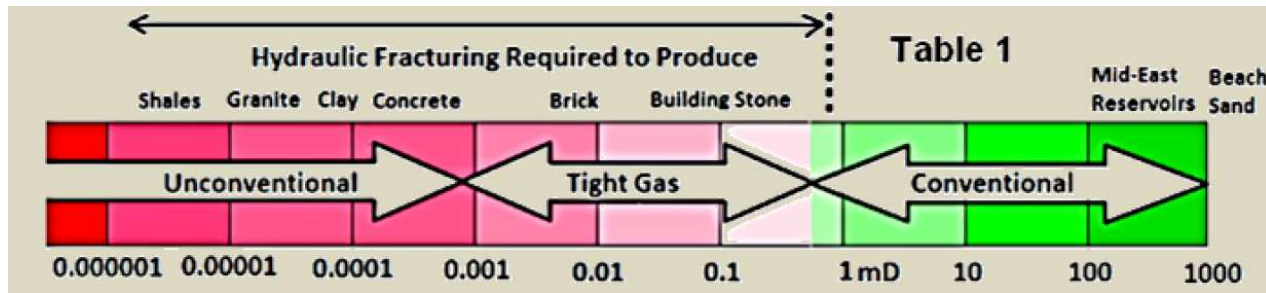
Database:  
All Products + Applications + worldwide Suppliers

*“In the oil service and drilling markets, one year is quite a while, two years is a long time, and five years is an eternity. Things can change very quickly in this cyclical business”*

- **The US shale oil & gas market has confirmed this old rule:**
  - Massive step changes have occurred in shale development methods, now unlocking extraordinarily difficult-to-access O&G resources at a pace unimaginable only five years ago
  - Shift from shale gas to shale oil
  - Environmental pressure & water scarcity
- **If your last update about shale gas is > 3 years old , it’s time to REVISE!**
- **If you want to evaluate the potential of your products which could be used in new technologies of oil production & exploitation...**

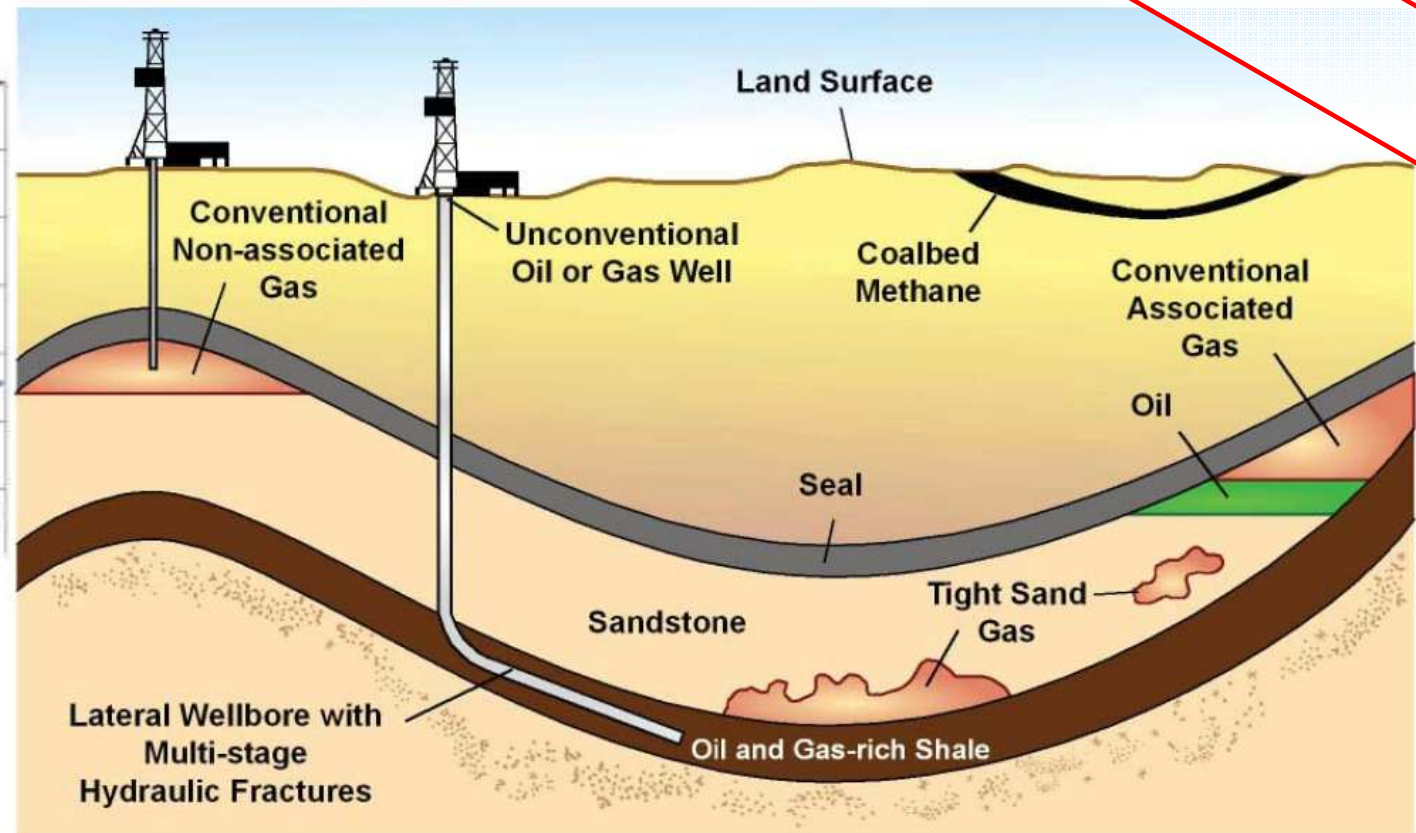


**Daydream is specialized in designing tailor-made market assessments on the Chemicals Oil & Gas market, from macro to micro point of views and Business Strategy Design.**

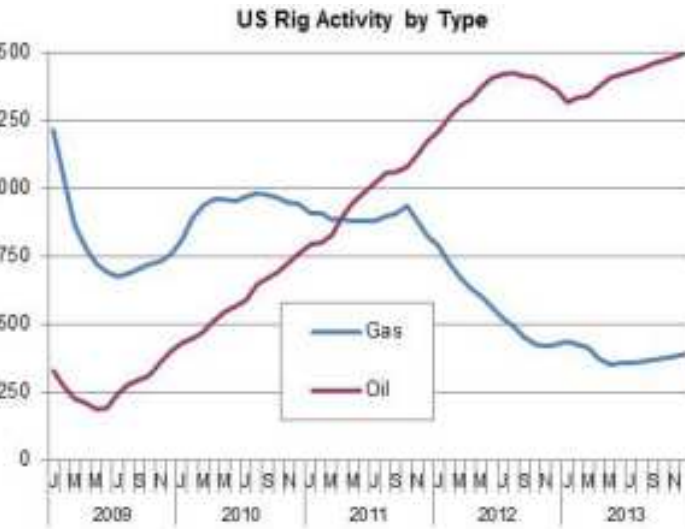


ILLUSTRATION

### The Geology of Conventional and Unconventional Oil and Gas



Source: EIA



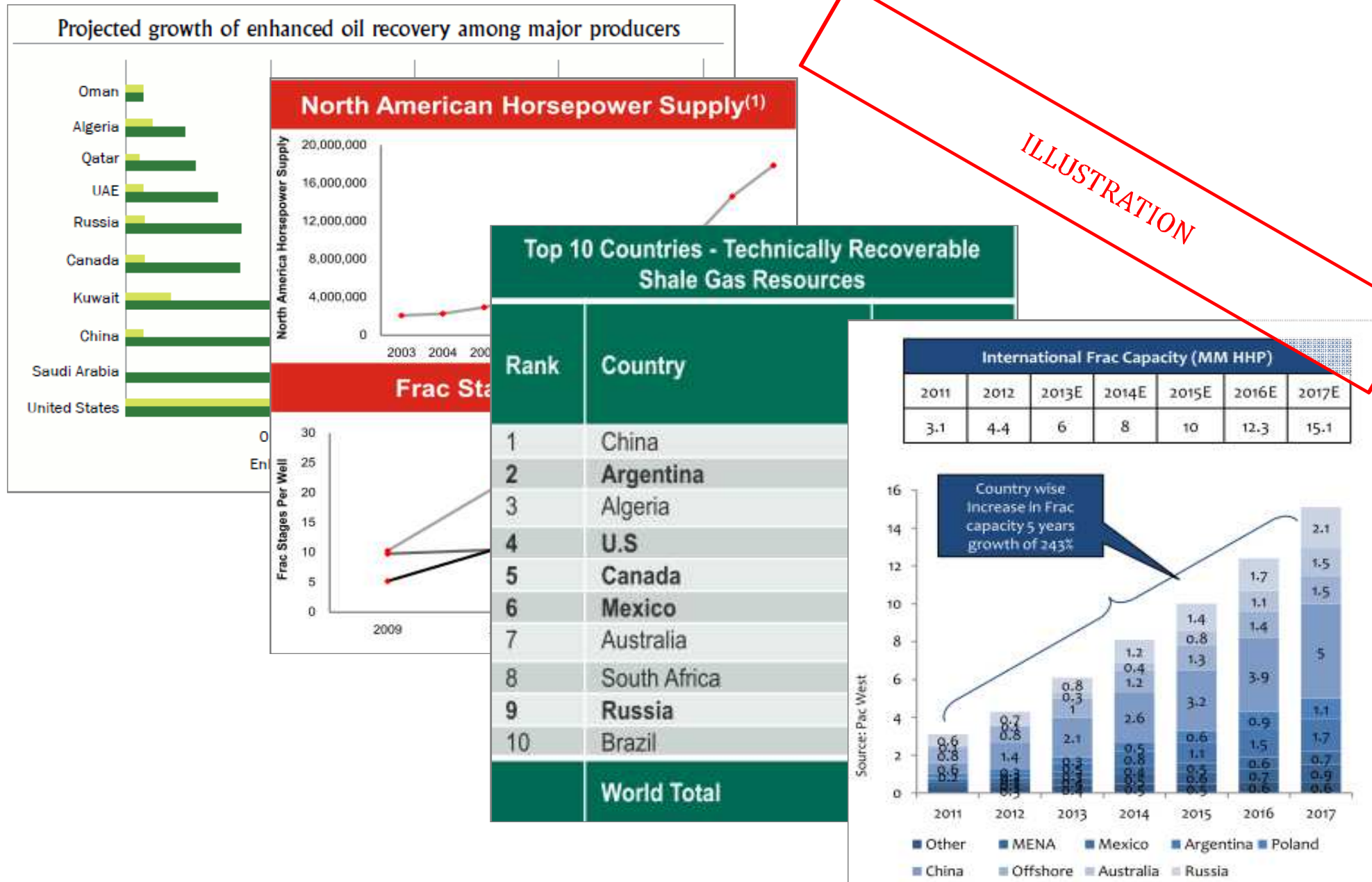
Source BHI Spears & Associates

Source: Permeability range of producing formations and where fracturing is needed for extraction (King 2012- Dalhousie University)



# Tool B: Market Focus on specific topics

## Illustration of our knowledge on O&G market



ILLUSTRATION

- **Global hydraulic fracturing market in 2011: \$31 billion (CAGR 10% 2012-2017)**
- **North America holds 90% of the global hydraulic fracturing production**
  - US is the largest market followed by Canada, China, Russia and Argentina.
  - US Oilfield Service companies Halliburton, Schlumberger, Baker Hughes, Weatherford, Trican, Champion Technologies (Ecolab) and Flotek are leading suppliers of fracturing services and in-house developed chemical solutions.
  - These leading companies operate worldwide and have local cooperation e.g. in China.
- **Main challenges for hydraulic fracturing market:**
  - Rapid depletion of reservoirs production squeezes profitability
  - Cost pressure: low US gas prices have turned shale gas boom into a shale oil boom
  - High water and energy consumption (for pressure pumps)
  - Public concerns about environment & workers health (silica dust) impacts
- **Main trends in hydraulic fracturing market**
  - Shift to less water demanding fracturing fluids e.g. energized fracturing fluids (N<sub>2</sub> /CO<sub>2</sub>)
  - Recycling of all water back into the fracturing fluid circuit
  - Improved environmental profile of chemicals throughout the entire process



# Daydream & Dynovel Presentation

*Cologne, Shanghai, Philadelphia, 2014*

- **B to B services delivering concrete Marketing and Business Development solutions readily operational for your business by providing you with a highly skilled and efficient team of Consultants.**
- **We bring the best services, geographical coverage, flexibility and efficiency to our worldwide clients. We provide the best local teams in each region (North America, Europe and Asia) and leverage the same global proven methods and tools that have been developed by Daydream for more than 15 years to deliver high quality results!**







# Oilfield chemicals

## Market Development Opportunities

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