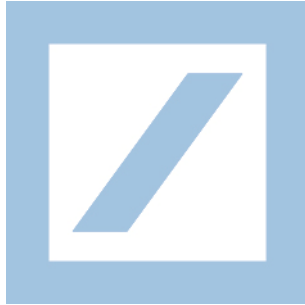
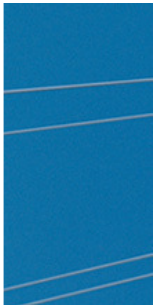


“Round the Globe – Future 2020” / Project IMO
Berlin – May 16, 2008

Germany 2020

New challenges for a land on expedition



Dr. Jan Hofmann
Senior Analyst

Think Tank of Deutsche Bank Group

Deutsche Bank Research



Project “Germany 2020” – why?

Germany’s **structural change** enters crucial phase

Ageing society
Globalisation
Rise of India, China
Climate change
Knowledge society

Which opportunities and risks for companies? → Scenario project, addressing:

How has this structural change affected the German economy by the year 2020?

A lot can happen in 12 years

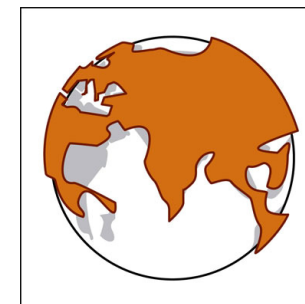
- The rise of **Chindia**
- **Unification** of Germany
- Disentangling of “**Deutschland AG**”
Capital links between the hundred largest German companies down from 168 to 80 (1996-2000)
- **Internet search** from unknown to multi-billion dollar business
Google’s market cap at USD 186 bn (as of May 2, 2008)
- **Mobile phones** from suitcase to palm size



A look beyond Germany's borders – through to 2020

■ Global **economic integration**

Increasing international division of labour and international trade, particularly in services



■ **EU as role model** for economic/political governance

Extended Euro area and enlarged single market

■ Politico-economic **rise of Emerging Markets**

Asia, Central and Eastern Europe, Latin America, Middle/Far East

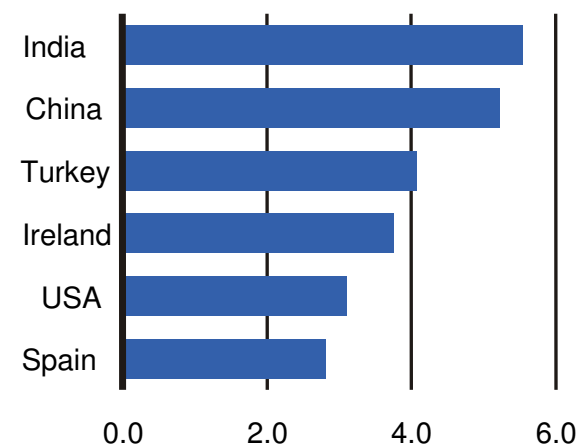
■ Redirection of migration flows

Successful Emerging Markets attractive for migrants

■ Uncle Sam remains benchmark, Spain is booming, the Celtic tiger keeps pouncing

Annual GDP growth 2006-2020

% yoy, p.a.



Source: Deutsche Bank Research *Formel-G*



2008

**A future scenario
for the year 2020**

by
Deutsche Bank Research



© Martini, Meyer 2007

Germany at the beginning of the third decade

A short overview in 2020

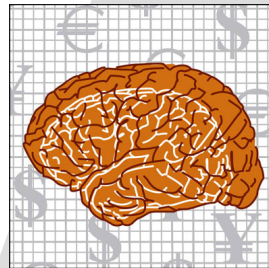
Value creation patterns
*Flexible cooperations among specialists –
 the project economy*



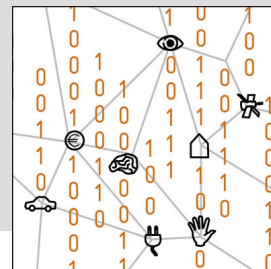
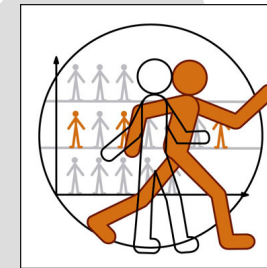
Politico-legal framework
*Slow dissolution of encrusted structures –
 towards cooperative, learning regulation*



Intellectual capital
*Modular education
 and trade in
 valued knowledge*



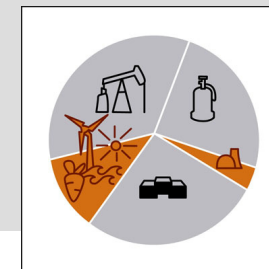
Social potential
*Self-reliant citizens
 and consumers –
 not only in the stabilised
 middle class*



Digitisation
Networked goods and the new internet



Global integration
Boom in German creativity exports



Energy supply
Broad energy mix, decentrally produced

Value creation patterns in 2020

Faster, smarter, more specialised, with the customers

- Rapidly risen “knowledge hurdle” for successful products, specialisation indispensable
 - **Stock of knowledge risen** strongly in each single field of expertise
 - Successful products often only **through combination** of separate fields

- Short-lived value creation structures
Product lifecycles shortened considerably

- Greater willingness to take risks; stronger capital market orientation
also: higher number of self-employed; more start-ups due to easier access to risk capital

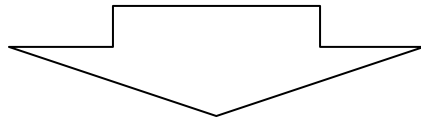
- More demanding, better-informed customers are part of the value chain
Customers call for more system products; want to choose from a broad quality and price range; are “prosumers”, closely integrated into processes

Value creation patterns in 2020 – the project economy

Flexible cooperations among specialists

“**Project economy**” is the answer

*Project economy in the narrower sense = cooperative value creation in organisationally and legally independent temporary projects (today **10-15 % of German value-added**)*



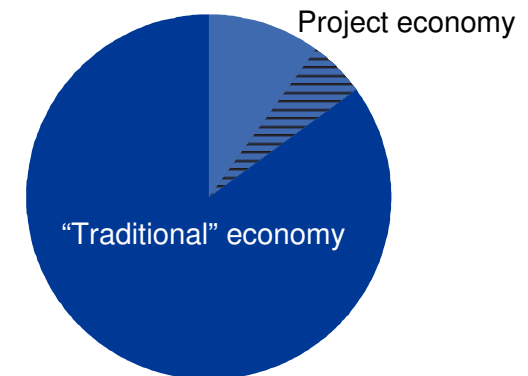
Project cooperation ...

- ... of specialists yields critical mass of knowledge
- ... promotes flexibility and innovation
- ... can limit risks and help to diversify them
- ... boosts customer knowledge



Project economy making headway

Share in national value-added, %



Source: Deutsche Bank Research

Value creation patterns in 2020 – the project economy

Effects on the economy and on companies

In the project economy ...

- ... cutting-edge technologies and innovative services were able to prosper
Exchange in communities of practice yields project ideas; spin-offs of universities and companies are avant-garde of the project economy

- ... legal consulting is integral to value-creation
Valuing contributions for fair distribution of profits is crucial

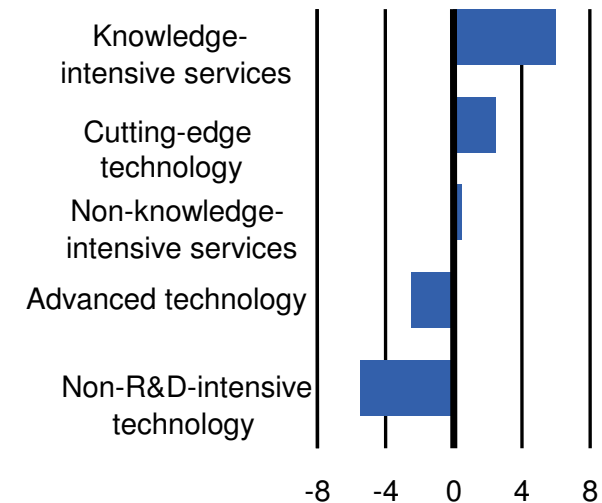
- ... brands have become even more important
Short-lived projects sell under licences of established brands

- ... much is demanded of employees
frequently changing co-workers, locations and tasks; volatile demands on professional skills



Knowledge wins

Change of shares in German gross value added, 2002-2020, %-points



Sources: German Federal Statistical Office, OECD, Deutsche Bank Research

Politico-legal framework in 2020

Slow dissolution of encrusted structures – towards cooperative regulation

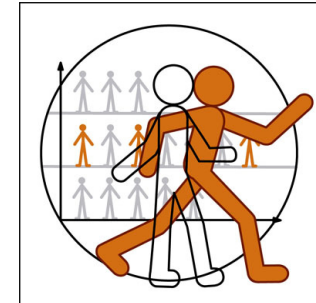
- **Clear division of duties between EU, government and citizens**
Subsidiary sharing of tasks between EU and member states; marked slashing of government-provided “services of general interest” due to tight budgets
- **Permeable political system, active lobbying**
Frequent alternations between the corporate sector, science and politics through projects; NGOs and lobby groups have stronger political influence
- **Intelligent co-regulation facilitates exploring new areas of value creation**
Thanks to higher transparency and predictability of governmental action
- **Standards as a competitive factor in the project economy**
Intra-industry standardisation below the level of governmental regulation



Social potential in 2020

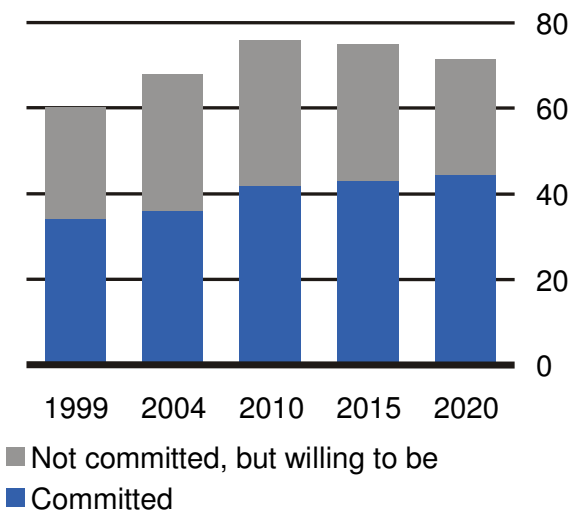
Self-reliant citizens and consumers – not only in the stabilised middle class

- **Fragmentation through social mobility**
More citizens on edges of income distribution; stabilisation of middle class due to knowledge-intensive employment (project economy!)
- **Individuals under considerable pressure**
High pressure arising from economic dynamics; risk of social decline for low-skilled workers, but risk also more transparent for the middle
- **Committed, sovereign citizens and consumers**
From public all-around services to private-sector projects; better-informed customers due to communities
- **Declining population, but increasing number and activity of elderly citizens**
More intelligent integration of ageing workers in the labour market; Germany is the lead market for goods and services that are attractive to the elderly; “enlightened gerontocracy”
- **Extended grey areas**
Those discriminated by project economy have to organise themselves in self-help networks



More committed

Social commitment, in % of Germans

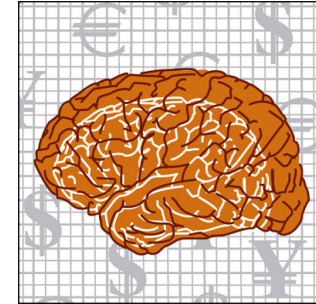


Sources: Freiwilligen-Survey, Deutsche Bank Research

Intellectual capital in 2020

Modular education and trade in valued knowledge

- Knowledge and intellectual property bear fruit
Knowledge and data markets are booming; intellectual property is an asset based on innovation-promoting regulation
- Efficient and growing markets for learning in the project economy
Complementary private and public offers, professionalised and transparent through certification; opening up of educational institutions to the private sector
- Systematic learning – lifelong
Learning modules assure smooth learning histories; combination of qualifications and soft skills useful in project economy
- “Brain gain”
Immigration of high-skilled manpower owing to attractive learning products and a sound economy



Germany's global integration in 2020

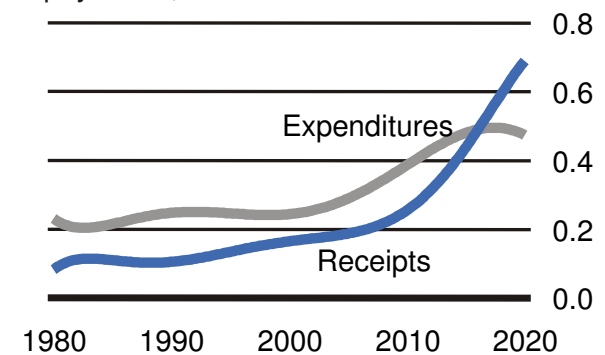
Boom in German creativity exports

- Germany is no longer export world champion
Since 2009 the title is with China
- “Created in Germany” often first choice, though
Success with exports of high-tech, patents, licenses, computer games, knowledge-intensive (especially “creative”) services
- Massive foreign investments into German innovators
FDI from India, China, South Korea etc., private equity from the US, Middle East – in German R&D, patents, brands, client databases
- Multinational project, anchored in local clusters
Physical or tele-cooperation of participants from many countries; but local clusters remain important
- Germany a clever middleweight in the political arena
China's and India's new political strength puts Germany's role into perspective; but German sway regarding int'l “project law”



Germany is net knowledge exporter

Patents and licences in international payments, % of GDP

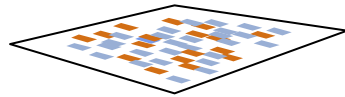


Sources: IMF, Deutsche Bank Research

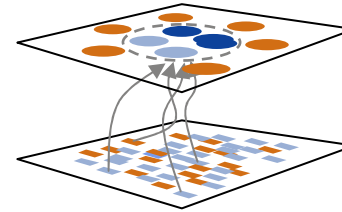
2020

Methodology

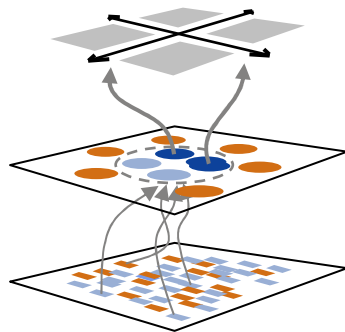
1 We identified the **crucial drivers** of our scenario topic, ...



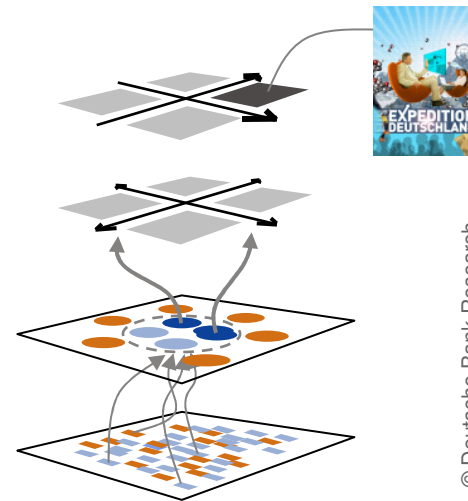
2 ... **bundled** them into “**dynamics**” to reduce complexity, ...



3 ... developed **four alternative scenarios** based on the dynamics' interactions, ...



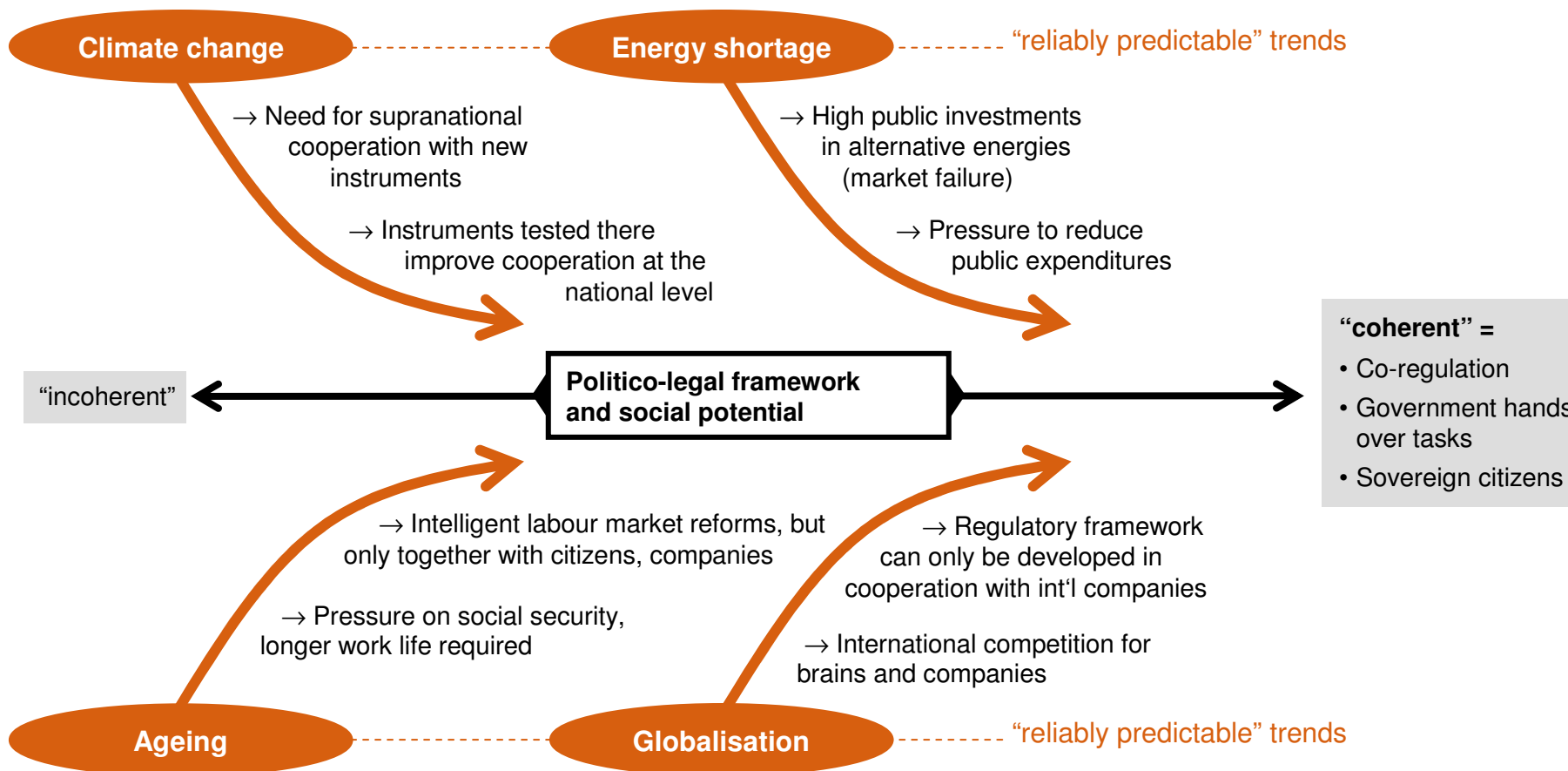
4 ... and identified the **most plausible scenario** through trend and path analysis.



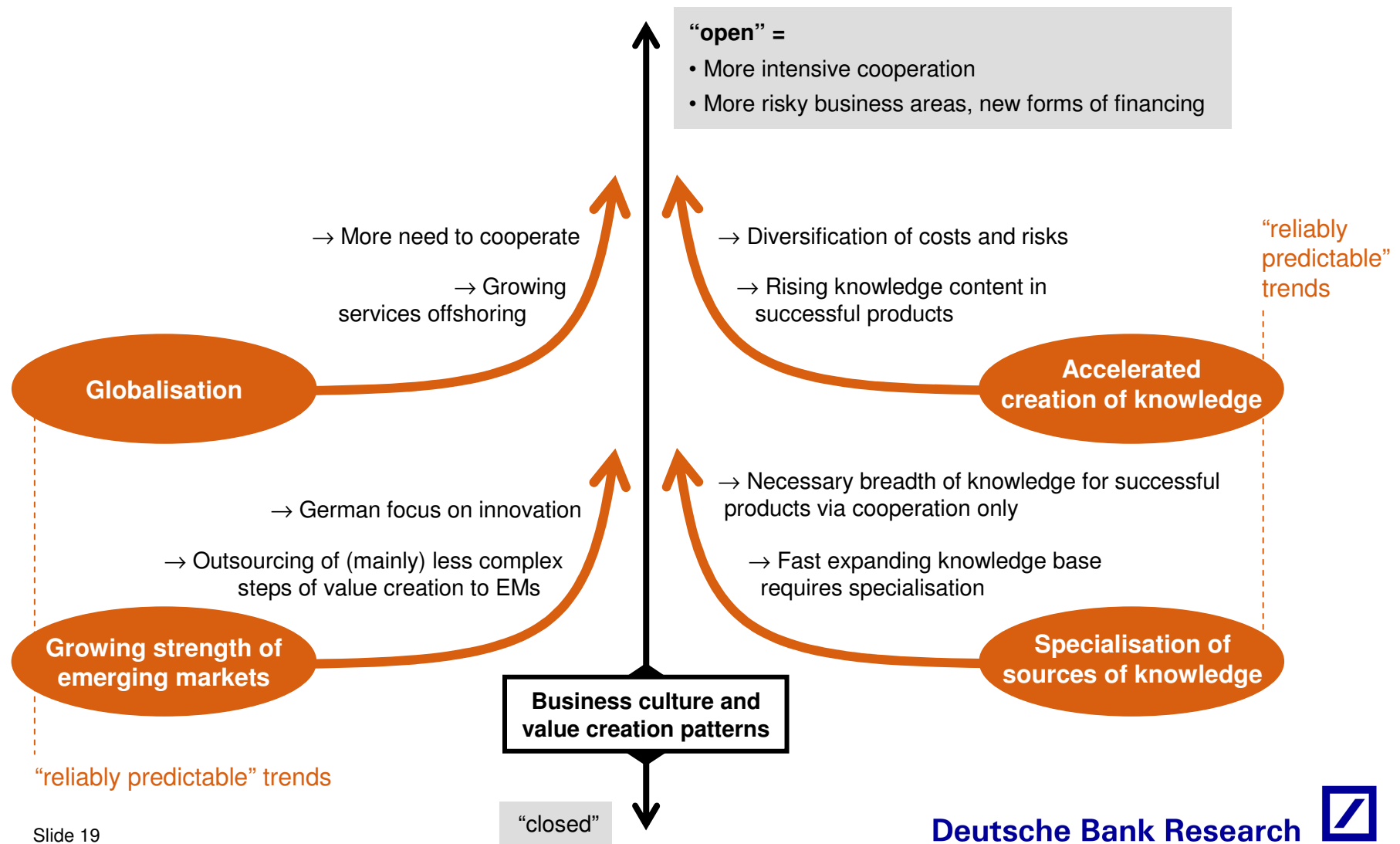
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Drivers towards “Expedition Deutschland” (1/2)



Drivers towards “Expedition Deutschland” (2/2)



Implications for work, learning, and innovation

- **Life-long learning** from lip service to reality

Private learning providers, modularised learning markets

Higher volatility in working life, fragmented career paths

- Growing demand for **social skills** (cooperation!)
- Shift to more **highly qualified work**, ...
- ... but also demand for those with **mid-level qualifications**

Implications for work, learning, and innovation

- Cleverer **integration of elderly** in workforce inevitable
- Innovation increasingly through constant **change, cooperation, interdisciplinarity**
- **Start-up culture** and numbers to grow
- **Valuation of intellectual capital** to boost competency development
- **Communities of practice** as background idea generators

Research topics

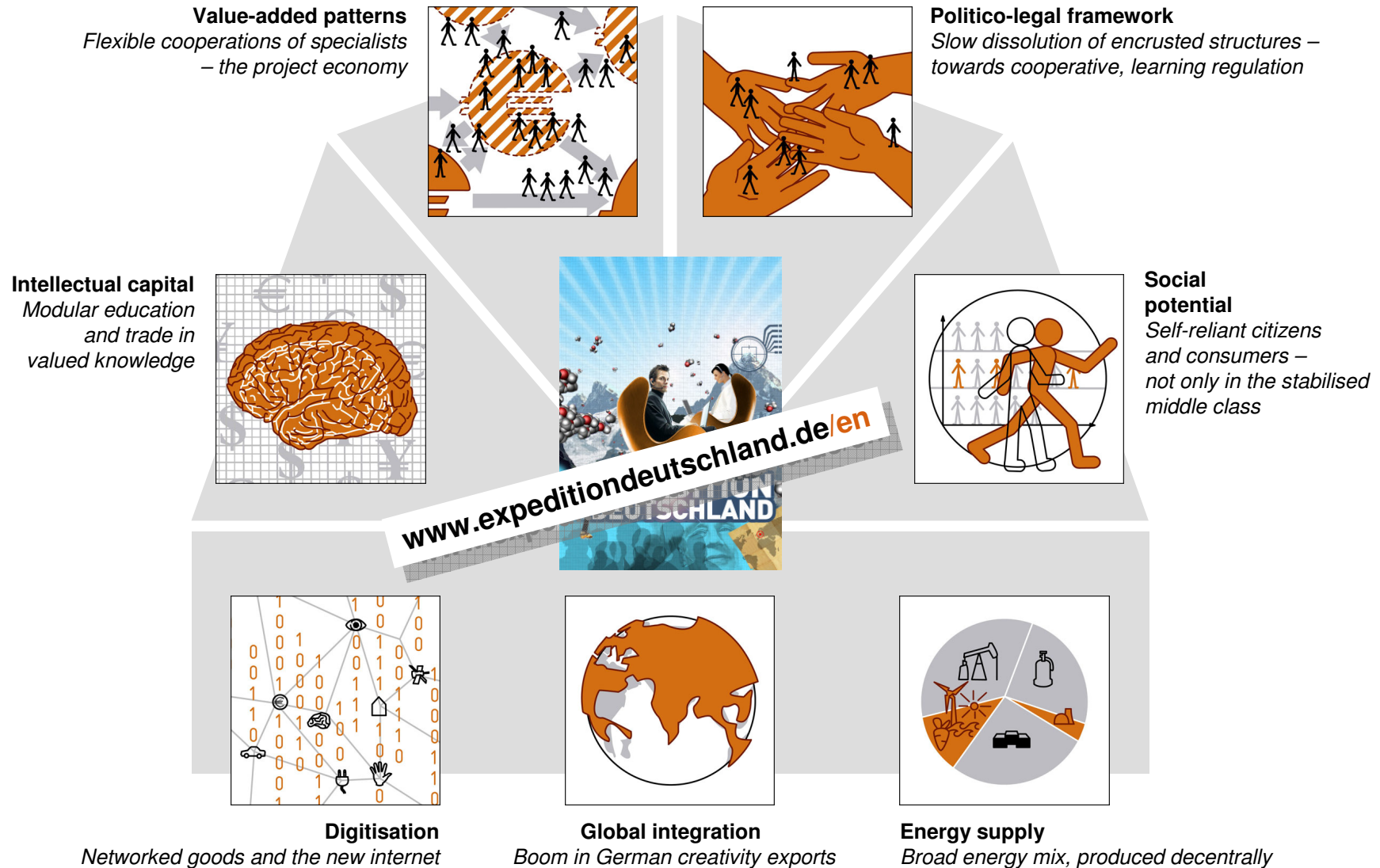
- Work-life balance in project economy
- Models/methods for integration of elderly
competence valuation, specialised advanced training etc.
- Boost of advanced education in public universities
beyond tertiary education
- New competencies for virtual collaboration
including social skills v2
- Who and how is the new mid-level knowledge worker?
- Advances in education advisory

Implications for companies

- **Make cooperation a strategic management task**
Discover different types of cooperation, analyse legal opportunities and pitfalls
- **Open up innovation processes**
to partners and customers, creating legal structures to deal with jointly developed IP
- **Communicate with consumer communities**
Appreciate user-generated input and word-of-mouth potential – but carefully
- **Provide more vocational/advanced training**
e. g. inter-cultural, social competencies, digital literacy; revise qualification frameworks
- **Make valuing knowledge a core competence**
Intellectual capital should be systematically valued and disclosed

„Expedition Deutschland“ – at a glance

Effects of the structural change until 2020



Thank you!

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Appendix

Digitisation in 2020

Networked goods and the new internet

- **Networked data and goods**

Uncomplicated, secure networking of databases as well as RFID chips enable new services in complex logistics chains

- **Internet 2.0**

More security through restructuring of the internet

- **“What belongs together will now grow together”**

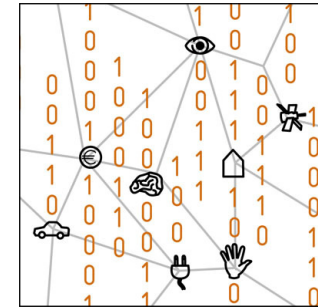
Converged infrastructures provide convenience and low prices

- **The next stage of project cooperation**

Experts are working efficiently in project teams that are located at different sites thanks to new human-machine interfaces

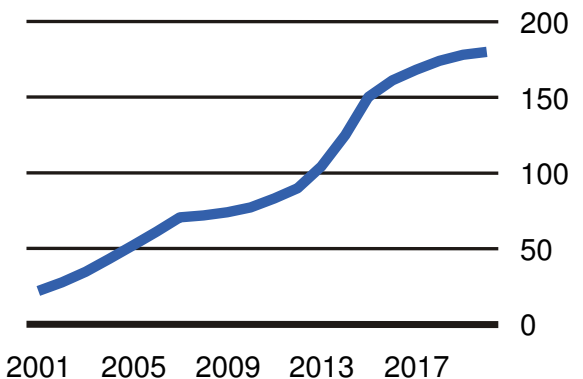
- **Simulation technology makes work more efficient**

Use of visualisation and simulation methods speeds up processes and cuts costs



Simulation turns real

Global turnover in simulation technology, EUR bn



Sources: DB Research, CyberEdge Information Services

Energy supply in 2020

Broad energy mix, produced decentrally

- **Mix it, baby!**

Strong rise in the price of fossile fuels has resulted in a broad energy mix, towards renewables

- **Decentralisation of supply**

Decentralisation and supra-regional control via the “energy internet” have made energy supply much more secure

- **Energy markets boom consistently**

Rising investment in research on alternative energy sources, resp. in their use; the energy sector was an early learning ground for project financing

- **New specialists and projects for energy security**

Innovative farmers produce renewables in projects; new energy-saving services

