



Management- und Technologieberatung AG

Long-term Trends in the IT Organization of the Chemical Industry

– Survey –

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Final Version

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- **Survey Background**

Organizations are not built to last forever – continuously they face new requirements and needs to adapt accordingly. This is true for external influences from the political, economical, social or technological environment as well as for internal changes in the strategic direction of a company – following the key statement “structure follows strategy” formulated by A. Chandler as early as 1962.

The outlined dynamic is of course also valid for IT organizations in the chemical industry. On the one hand, they have to react on the technological dynamic of their services – actual examples are cloud computing, social networks, and virtualization on nearly all infrastructure layers. On the other hand, they are challenged by significant changes in their legislative and regulatory environment – directly and indirectly. Prominent examples are GAMP regulations, environmental protection requirements that can be subsumed under the term “green IT”, Basel II, or the Sarbanes-Oxley-Act and the Homeland Security Act.

Last but not least, IT has to add value to their company efficiently, reliably and on a sustainable basis. This is an enormous challenge in case of multi-national corporations with dozens of divisions, business units or functions and hundreds of legal entities. The optimal organizational design of the IT with regard to these requirements is not getting any simpler against the background of the volatile state of the global economy.

With this background in mind the JSC Technologie- und Management AG has initiated a study in order to identify and precisely define long-term trends for the organizational design of the IT in the chemical industry which could be used as a kind of reference point for the participating companies.

The segmentation of IT tasks into the 3 areas IT service delivery, IT governance, and IT demand management served as starting point.

In this context IT service delivery means the specification (design), development (build) and operation (run) of IT services. IT services are applications, business neutral infrastructure components or combinations of both. IT service delivery units have to ensure the provision of effective, efficient, reliable and secure IT services according to the demand addressed by IT demand management and according to the rules set by IT governance.

IT governance is the legal and practical framework for management, organization, and controlling of the IT. The IT governance has to ensure that corporate objectives are supported by the use of IT and risks are monitored and under control.

The IT demand management usually comprises: understanding and challenging the customer's demand, translating the demand into IT language, identifying the best IT solution – e.g. satisfying demand by provision of a standard service / adaptation of existing service / creation of new service – as well as management of the customer specific IT project portfolio and possibly also his IT budget.

These explanations do not claim to be universally valid definitions but ensured that questions addressed by the study were understood and answered based on a shared understanding by all participants.

11 multi-national corporations were involved in the study – representing more than 135 billion EURO net sales in 2010. Some of them are included in the TOP10 of the chemical industry worldwide depending on how the chemical market is exactly defined – e.g. basic or commodity chemicals, polymers, specialties incl. consumer products and life sciences. Overall, the sample should be big enough to be of statistical significance.

Summary

IT Service Delivery (1)



In the IT service delivery area the traditional organizational separation between application and infrastructure is still most frequently used but new approaches like separation between development and delivery across application and infrastructure or horizontal process teams becomes visible.

Due to the dramatic change in the proportion of outsourced IT services ¹⁾ JSC expects a clear trend towards these new segmentation rules since IT organizations structured according e.g. plan, build and run are easier to transfer into the extended cooperation model with third parties.

The majority of involved companies agree that organizational design in application and infrastructure is guided by different rules.

The dominant classification criteria within the application area are business process and software platform addressing both customer intimacy as well as cost benefits via maximizing technology driven EoS ²⁾.

If outsourcing gains importance the platform oriented substructure would be transferred to the external service provider while the internal IT organization would be either organized according to business processes and / or customers, i.e. business units.

1) see page 14, 2) economies of scale

It should be mentioned that an application unit which is on its first level regionally organized is clearly outdated based on the belief of participating companies.

Key success factors for a highly accepted application service provider in the globally acting chemical industry are obvious: deliver systems according business process requirements on a truly global basis. The last point means strong and intensified cooperation within the world-wide IT community of a company. Here, the participants see currently some weaknesses which have to be overcome in the future. ¹⁾

Since business neutral infrastructure is already assessed as commodity service the most important design criterion is and will remain technology platform in order to further optimize cost efficiency. Nevertheless, this could partially change in future. With introduction of ITIL based processes as de-facto standards ITIL oriented organizations are real options for infrastructure services.

Without going too much into the details ITIL oriented structure can be understood as a consolidation of process management for incidents, service requests, problems, changes and configurations as well as events including bundling of 1st and 2nd level support tasks into a service management unit which interacts with operational, technology oriented service units based on well-specified and formalized interfaces. This concept also defines a predetermined breaking point.

1) see page 16

In all companies IT governance is well established with a comprehensive scope of tasks:

IT strategy, IT compliance, IT project portfolio management, IT controlling, IT standard setting and management of IT key staff addressing value contribution of the IT to the success of the corporation as well as its cost efficiency - i.e. IT governance shows already a high level of maturity in the industry.

So, what can be expected for the future? – It is expected that the traditional elements of the IT governance will be complemented by governance processes required for steering the partner network which will definitely gain importance. Additionally, creative architectural tasks appear on the IT governance stage. Overall, this is more an evolutionary than a revolutionary development.

More than one half of the participating companies keep IT governance independent from IT service delivery – only a minority is running both tasks integrated in one unit.

In order to strengthen the independency of governance against service providers some companies even keep them in different legal entities – e.g. IT governance unit in the Corporate Center and IT service provisioning in a spin-off.

Summary

IT Governance (2)



Three quarters of companies are satisfied with their organizational solution and don't see any urgent need for adjusting their current cooperation model.

The survey results emphasize former statements that regarding scope of tasks and organizational layout of IT governance no major changes are to be expected in the next years.

But since the world is steadily changing, participants can imagine more extensive adjustments in the IT governance area if – for example – the corporation defines new strategic directions for the company or for the IT and if the IT service provisioning must be developed towards a new level of cost efficiency.

Summary

IT Demand Management (1)



First of all, all companies have the IT demand management role already established with a focus on specification and quantification of customer IT requirements.

That covers participation in description of project ideas and in project feasibility studies, specification of demand with respect to standard IT services as well as identification and assessment of IT innovations which could add value to the businesses. From a commercial viewpoint IT demand management also includes IT project portfolio management and the definition and negotiation of the yearly IT budget of a business unit for which a demand manager is responsible for.

Compared to IT governance it is expected that the task scope for the IT demand management will change quite significantly in the future since the management of the interface between customers and IT service providers will be further professionalized.

Considering the trend towards a higher outsourcing proportion ¹⁾ this statement is highly understandable.

The IT demand management will be enriched by negotiation of SLAs ²⁾, monitoring of daily service provisioning based on SLAs including their committed service levels and escalation management in case of deviations.

1) see page 14, 2) service level agreements

Summary

IT Demand Management (2)



It seems that it is not decisive to whom demand managers organizationally belong. All alternatives – allocated to IT and / or allocated to customers – appear among the enterprises and mostly companies do not see reasons for a change.

The importance of demand management is already adequately recognized: in most companies demand managers report directly to the CIO – either the CIO leads them disciplinary if they belong to the IT division or functionally if they are members of the businesses or functions which are customers of IT. Two third of the companies keeps them organizationally “independent” from the IT service delivery units.

Summary

Global Function or Spin-Off



One topic of the trend analysis deals with questions related to the organizational development of the IT as a whole: for example the question “which model – IT as global function or IT as spin-off – will shape the future?” In this context, spin-off can generally be understood as transfer of an organizational unit of a company to a separate legal entity which becomes an independent business. The company usually holds 100% of the shares, supports with services or assets and is very often the preferred customer.

Integration of business services with IT services in a spin-off is currently an exception but if already established it is being pursued and remains a serious option for the future – over both the short and long term.

IT as a global function is currently the dominant model for the analyzed companies. Nevertheless, this could change in the long term since movement toward spin-off is a realistic perspective for nearly the half of companies having currently a global IT function.

JSC believes that the question which direction is the most likely one depends on the IT sourcing strategy of a company – the rationale is very simple: the more services are outsourced the less internal spin-offs are needed.

Summary

Partnerships, External Market and Outsourcing (1)



Strategic partnerships are already widespread in the universe of participating companies – therefore, a further increase in its importance can be observed but is limited. Main business drivers for strategic partnerships are cost benefits ¹⁾, know-how access, and own capacity bottlenecks.

For the present and the future strategic partnerships do not mean joint ventures or equity interests – as global function in a non-core area of the chemical industry such M&A activities are not accessible for the IT.

A corresponding picture is shown in the area of business with third parties: tapping into external markets is either not allowed or strictly limited by the corporation leading to a so-called opportunistic approach and questioning its sustainable success.

Such boundaries lead to a proportion of less than 10% external revenue of the IT budget – or the IT revenue ²⁾ – for nearly all enterprises. This picture is expected to be stable also in the future.

Especially for IT spin-offs “conquest of markets outside the own company” was a main decision driver up until the recent past – this has changed. JSC supposes that competition, general dynamic and ongoing consolidation within “real” markets is too intensive for new players to be able to win significant market shares.

1) e.g. EoS or factor cost advantages of the partner, 2) in case of IT spin-off

Summary

Partnerships, External Market and Outsourcing (2)



JSC asked participating companies about developments in their outsourcing behavior with respect to several IT services. The outcomes are in their clarity surprising and can be summarized as followed:

The closer an IT service is to the customer and his business processes the less it's a candidate for outsourcing. That means, IT related business consulting, application development and maintenance are currently not in the forefront of outsourcing attention while all infrastructure services – e.g. data center, network, client, services desk – are already outsourced but to a different degree.

The level of vertical range of manufacture will clearly be developed towards an increased outsourced proportion. In all considered service areas the proportion of external support is expected to grow dramatically. Hot candidates are service desk, client services, telephony (VoIP), as well as application development and maintenance.

There are only two exceptions: IT governance is crucial in order to keep control over the IT provisioning process and therefore judged as a pure in-house task. This will remain unchanged also in future – and the IT related business consulting is seen as strategically relevant and will therefore be a core task for the internal IT.

Summary

Partnerships, External Market and Outsourcing (3)



Due to this trend, external costs will increase in the next five years reaching more than 50% of the total IT costs in 6 of eleven companies while three of them at least reach more than 25% and less than 50%.

How can developments be further specified with respect to the classical dimensions generally used to describe a sourcing concept: regional scope, amount of partners as well as backup concepts?

Currently, there is no clear pattern but some faint signals. The majority of participating companies has preferences for a global or at least for a regional approach reflecting the increasing demand of their customers concerning global solutions ¹⁾.

The amount of involved outsourcing partners reaches from the “best of breed” concept to having only a few partners – each for a selected set of IT services. The “one fits all” approach – i.e. one external provider for all IT services – is not assessed as very attractive. Due to the increased importance of outsourcing more and more companies plan to install backup suppliers at least for their critical IT services.

More outsourcing with a complex partner structure requires a central internal IT unit in order to manage the related processes comprehensively and proactively – this is stated by nearly all companies and supported by the identified IT governance trends.

1) e.g. ERP applications, global infrastructure services like mailing or collaboration

Summary

International IT Management



Local or regional IT units are already functionally led by the central IT. Independent de-central IT units are things of the past. Nearly in half of the analyzed corporations the regional / country IT unit heads report directly to the CIO which indicates increasing effort in order to develop and facilitate a truly international service delivery approach.

Nevertheless, lack of direct access, cultural differences, geographical distance, and the huge differences in capacity between the central IT and the IT in the countries / regions make effective and efficient world-wide IT management difficult.

In general, IT subsidiaries are an appropriate and possible way to overcome especially lack of direct access but do not play a significant role in the “real life” of the involved IT organizations.

JSC expects a huge need to catch up in better international IT management since all already discussed IT areas in this study like governance, demand management and service delivery will be further developed towards a more global setup.

Considering the identified trends in the organizational design of the IT at least 6 key areas of action for the CIO become obvious:

- Get guidance from TOP management regarding fundamental design direction – IT as global function, spin-off together with business services or as pure IT spin-off
- Ensure clarity concerning your long-term sourcing strategy since it will influence major building blocks of the future IT organization
- Prepare IT governance and IT demand management processes and roles for an increasing amount of external partners involved in service provisioning and keep them independent from own service delivery
- Formalize, streamline and optimize your entire contract management process ¹⁾
- Strengthen the international IT structure towards a real global IT community which for example also implies that CoC should be setup throughout the world in order to reflect increasing importance of emerging markets accordingly
- And finally, refrain from considering the external market – this will neither improve the IT cost situation nor will it help in the core business

JSC thanks all participating companies for their contribution and hopes that study outcome was worth the effort.

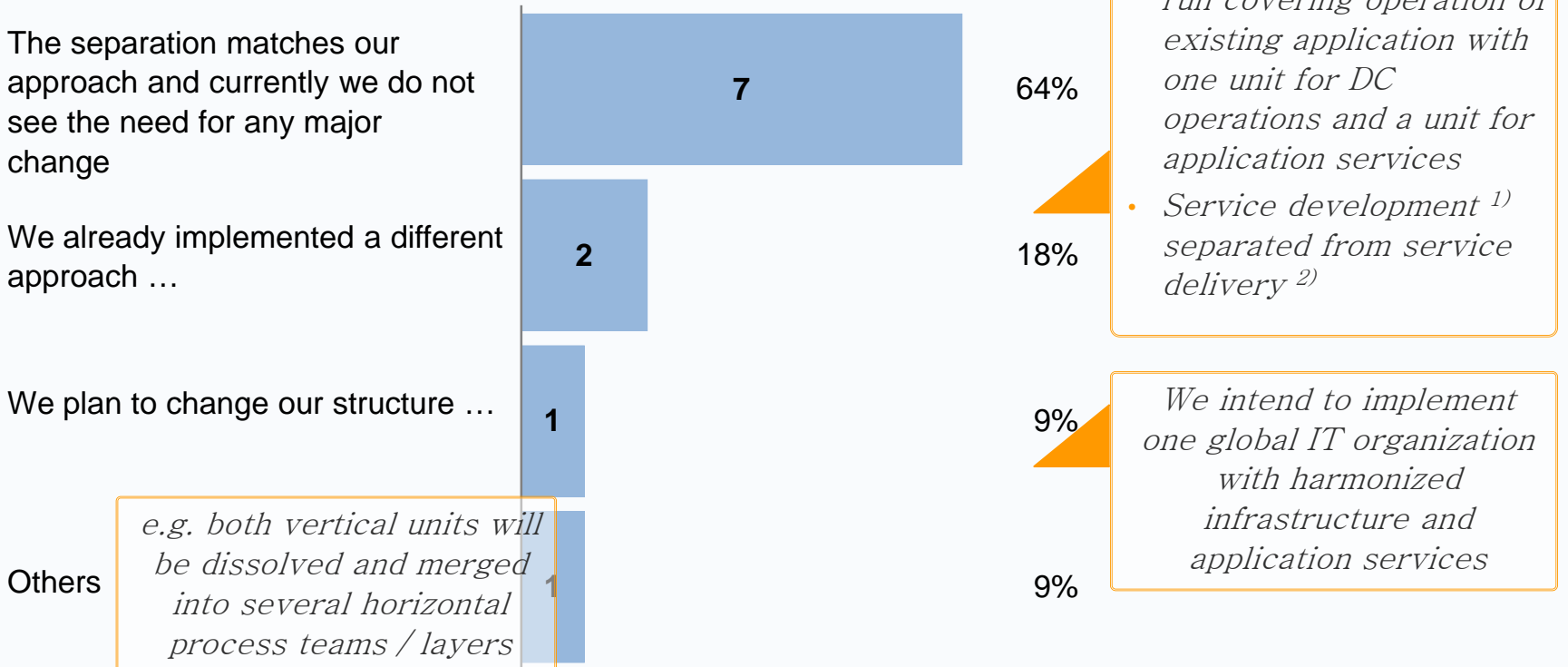
1) e.g. framework contracts, modularized SLA templates, price lists, regular SLA based reporting

IT Service Delivery

Applications and infrastructure are often organizationally separated – what is the situation in your IT?



At present



The traditional separation between application and infrastructure is used most frequently – new approaches (separation between development and delivery across application and infrastructure, horizontal process teams) become visible

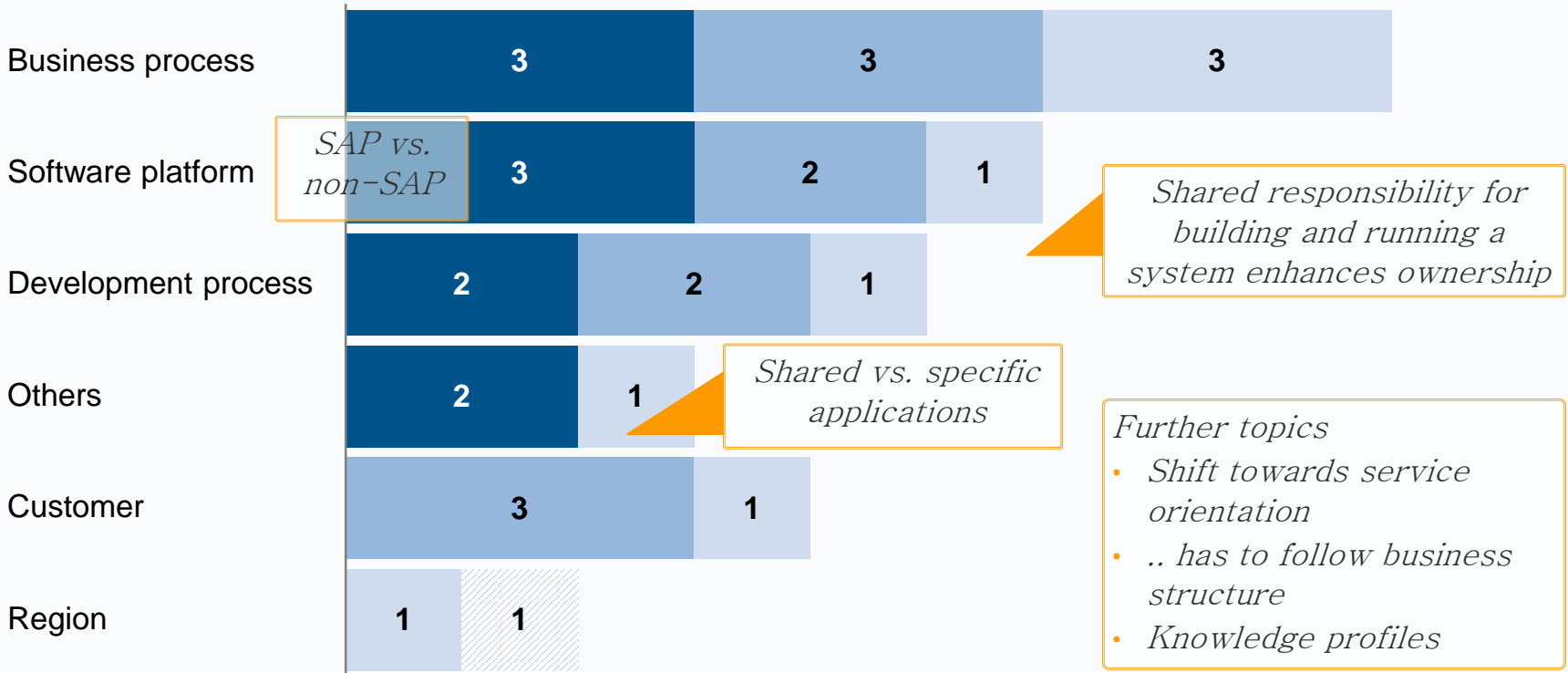
universe 11, 1) application and infrastructure, 2) e.g. data center, helpdesk

IT Service Delivery

Apart from the split, the inner structure of applications follows on first / second / third level ...



At present



Dominant classification criteria in the application area are business process and software platform addressing customer orientation / intimacy as well as cost benefits via maximizing technology driven EoS – a regional segmentation is outdated

universe 10, level 1: level 2: level 3:

IT Service Delivery

What is your position with regard to the following statements?



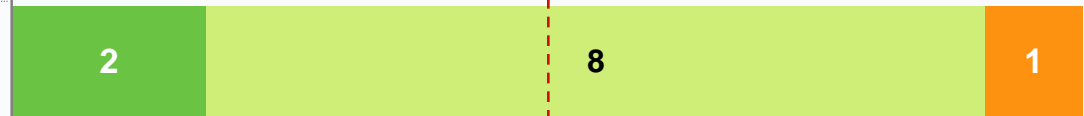
Alignment of applications with corporate process requirements needs to be strongly intensified



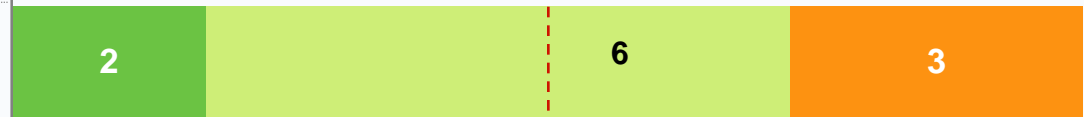
Without a global approach, application development and maintenance can no longer fulfill business requirements



Design criteria for optimization in infrastructure differ from those relevant in applications' organization



The organizational separation of applications and infrastructure will be overcome by technical innovations



Increasing differences between our businesses result in a growing number of application variants leading to a more complex landscape



Growing protectionism in the global economy will limit worldwide application standardization as well as consolidation of IT resources



Key success factors for a highly accepted (internal) application service provider are obvious: deliver applications according business process requirements on a global basis

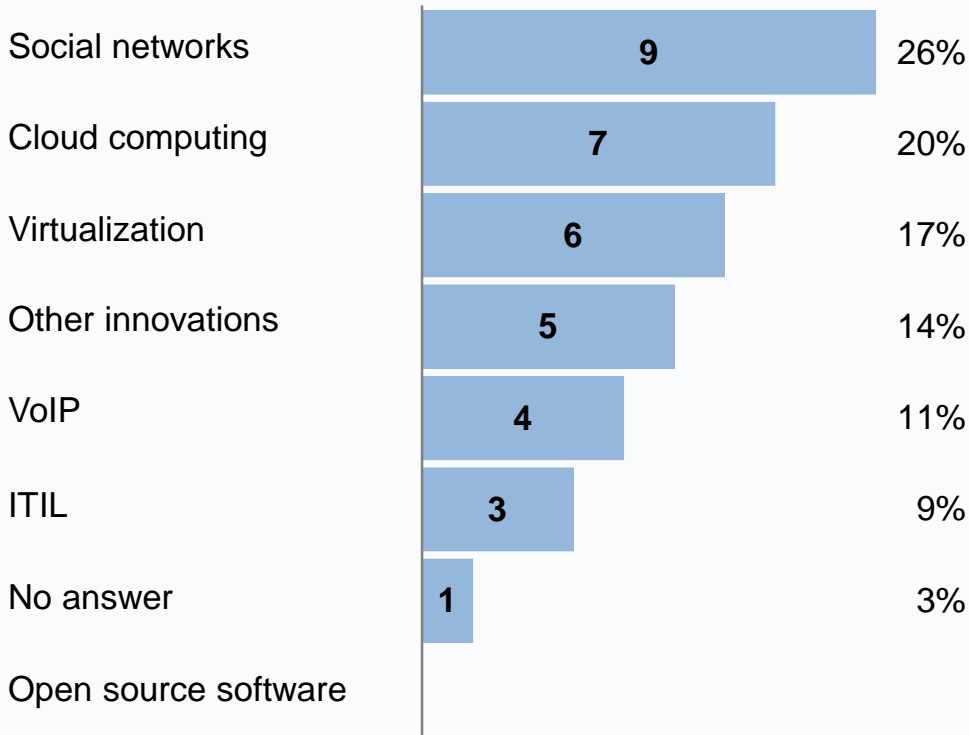
universe 11, fully: ■ partially: ■ don't: ■

IT Service Delivery

Which technical or procedural IT innovations will in your point of view influence the future organizational IT design?



IT Innovation



Upcoming challenges

- *IT has to play a very active role in global organization, virtual teams and leadership approaches for high performing organizations*
- *... organizational integration of commercial and production IT*

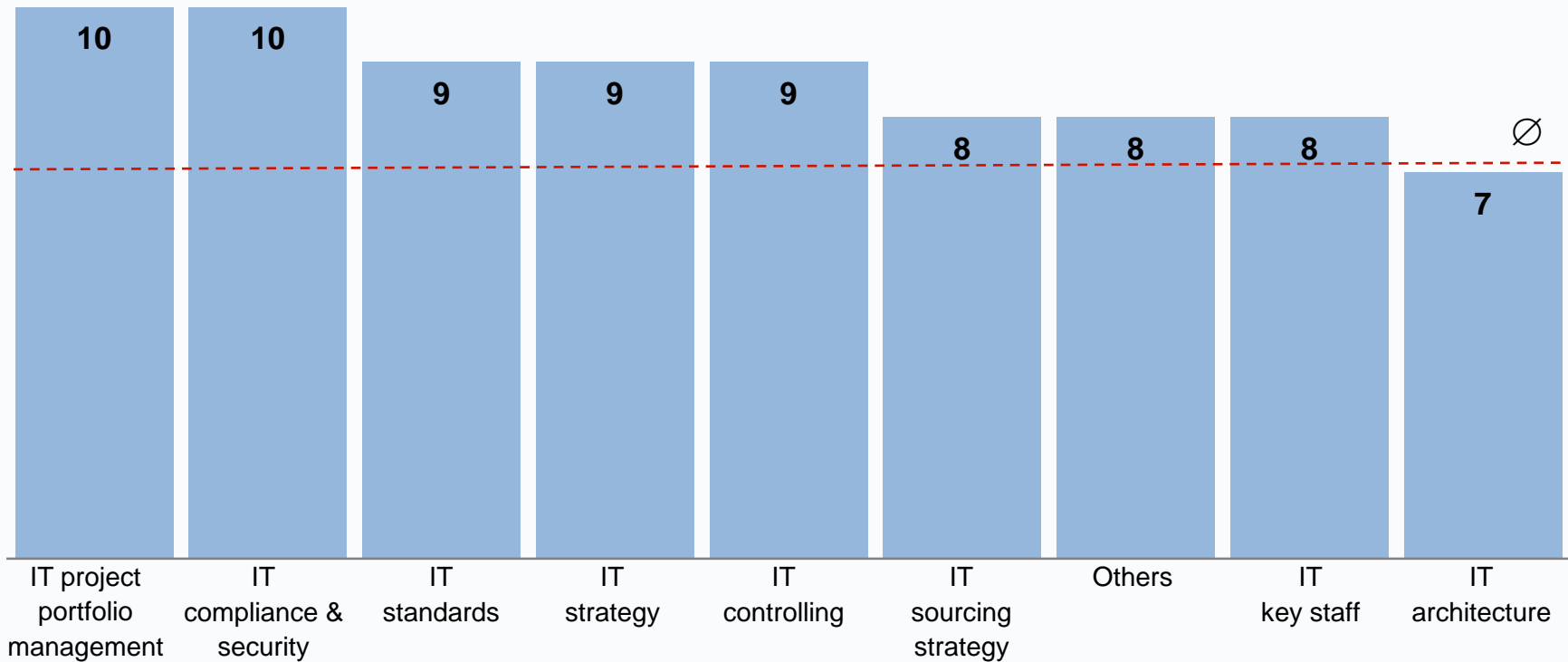
▶ The topic social network – followed by cloud computing and virtualization – may have some impact on the organizational layout of the IT but direction and real consequences in the design are difficult to see

IT Governance

How does your company define the task IT governance in terms of content? – the task includes ...(1)



At present



IT governance is already implemented with a comprehensive scope of tasks: IT strategy, IT compliance, project portfolio management, IT controlling, IT standard setting and management of IT key staff addressing IT value contribution as well as its cost efficiency

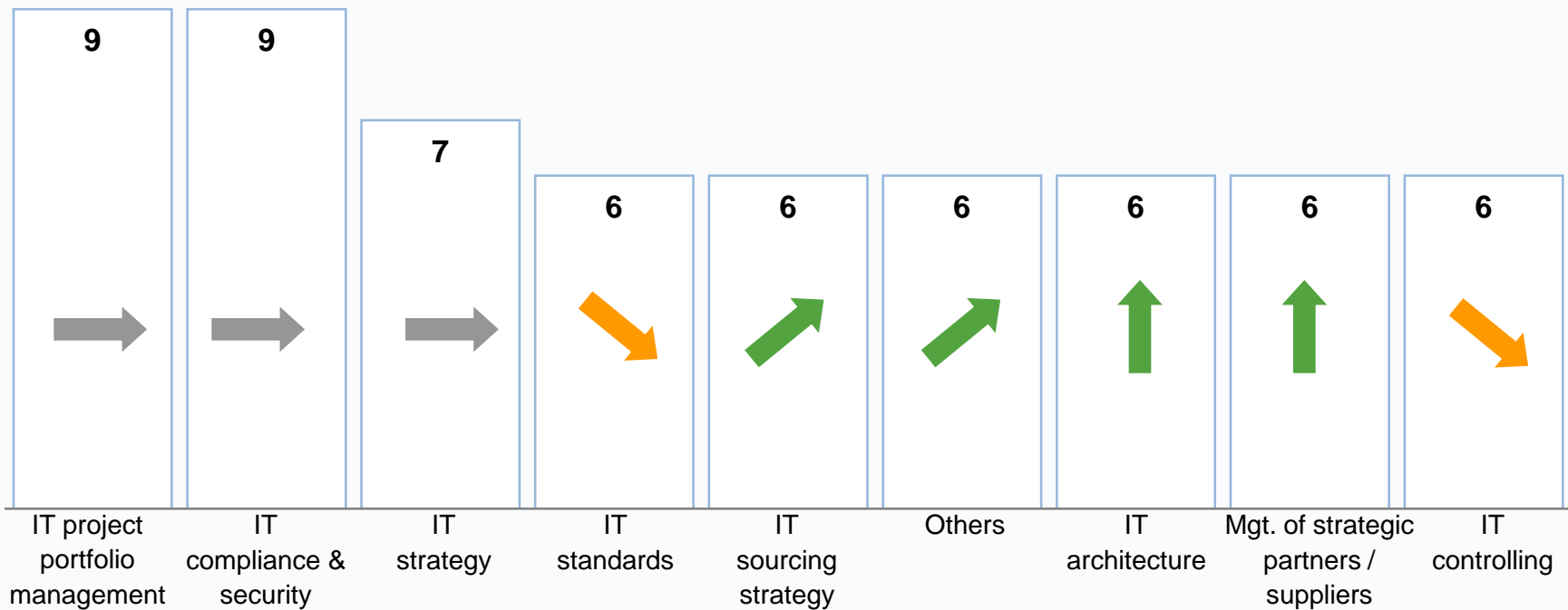
universe 11

IT Governance

How does your company define the task IT governance in terms of content? – the task includes ... (2)



... In future



▶ “Traditional” elements of IT governance will be supplemented by governance processes required for steering the partner network which will gain importance as well as fundamental architectural tasks

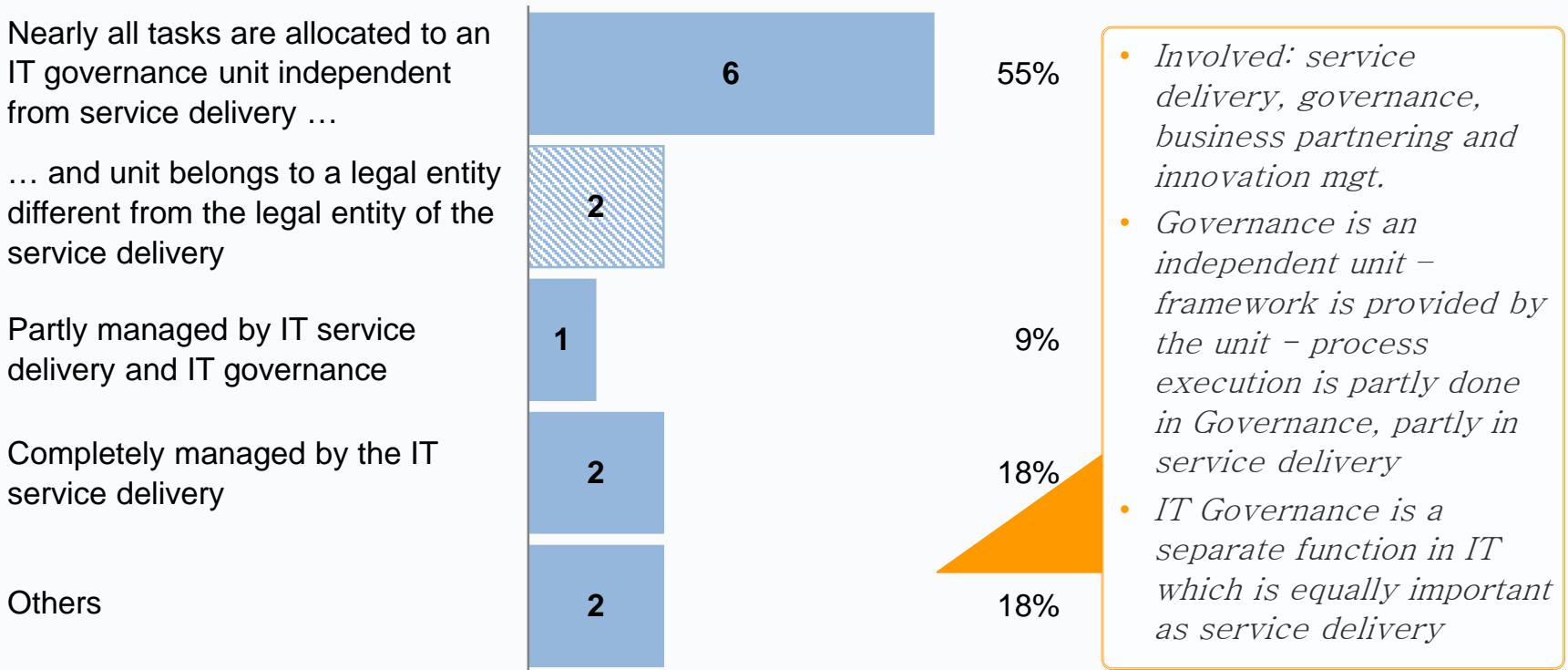
universe 11, change in rank

IT Governance

How are the tasks of IT governance organized in your company?



At present



More than one half of the participating companies keep IT governance independent from IT service delivery – only a minority is running both tasks integrated in one unit

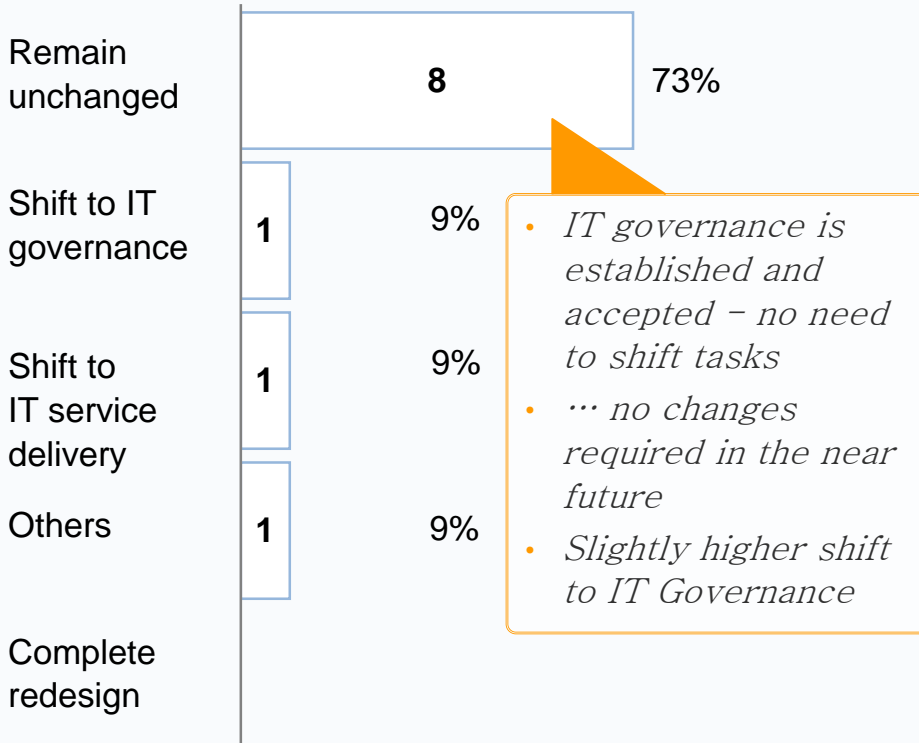
universe 11

IT Governance

The current distribution of IT governance tasks between service delivery units and a dedicated IT governance unit will ...



... In future



- *IT governance is established and accepted – no need to shift tasks*
- *... no changes required in the near future*
- *Slightly higher shift to IT Governance*

Main reasons for a change are ...¹⁾



Three quarters of companies are satisfied with their solution and don't see urgent need for adjusting their cooperation model – changing requirements regarding IT strategy, effectiveness and efficiency might in the long run indicate need for action

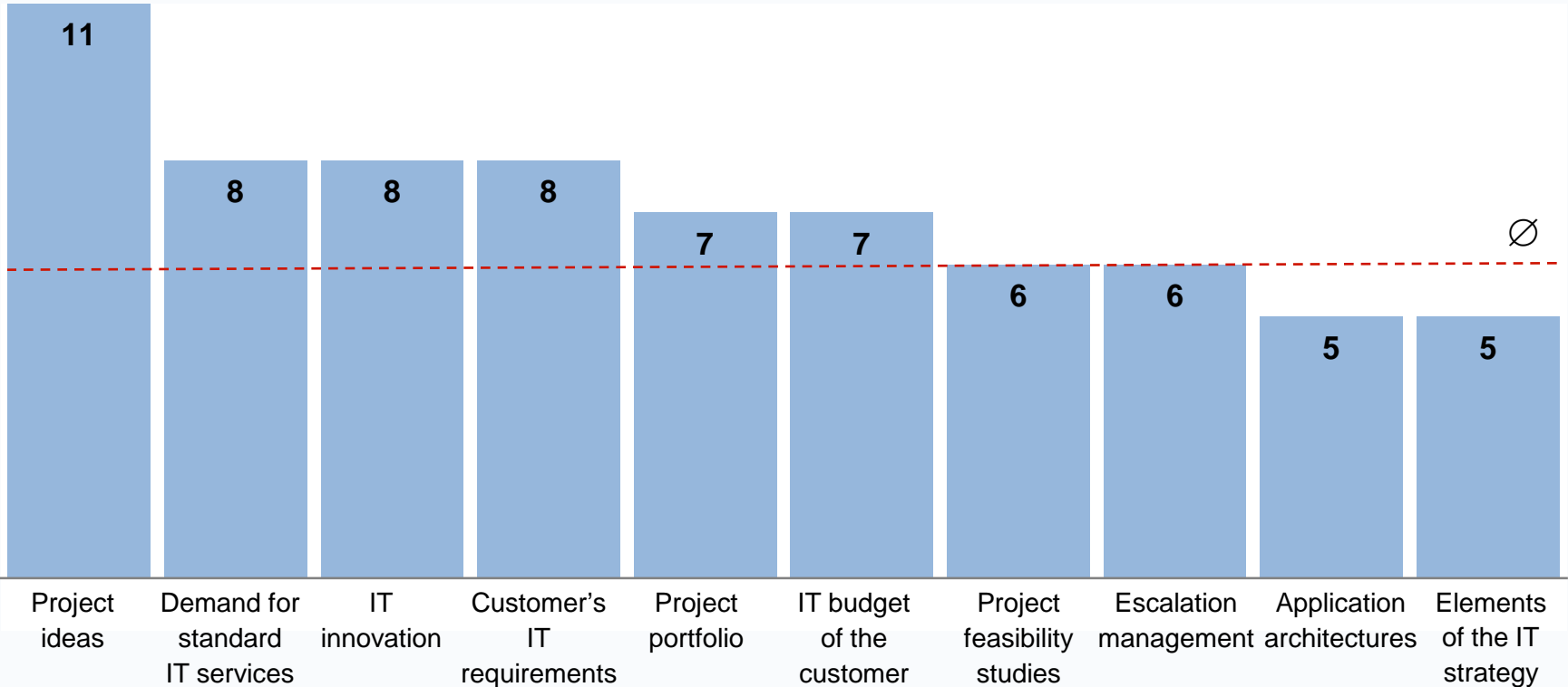
universe: 11, 1) weighted by rank

IT Demand Management

How does your company define the demand management task in terms of content? (1)



At present



Specification and quantification of customer requirements – i.e. project ideas, feasibility studies, standard IT services, and consolidated IT budget – are in the centre of current demand management – supplemented by IT project portfolio and IT innovation mgt.

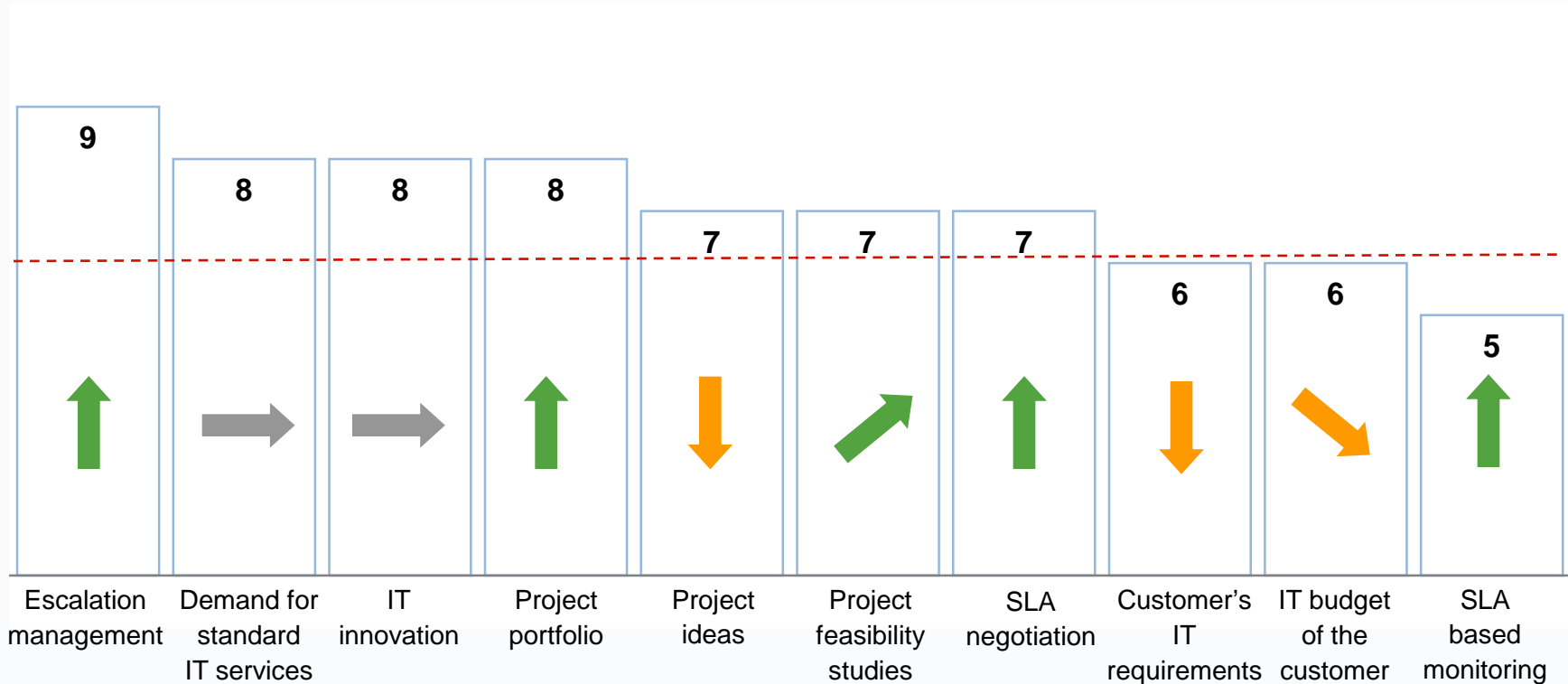
universe 11

IT Demand Management

How does your company define the demand management task in terms of content? (2)



... In future



▶ This picture is expected to be changed significantly since the interface between customers and IT services will be further professionalized (SLA negotiation, SLA based monitoring, and escalation management in case of deviations, priority setting via portfolio management)

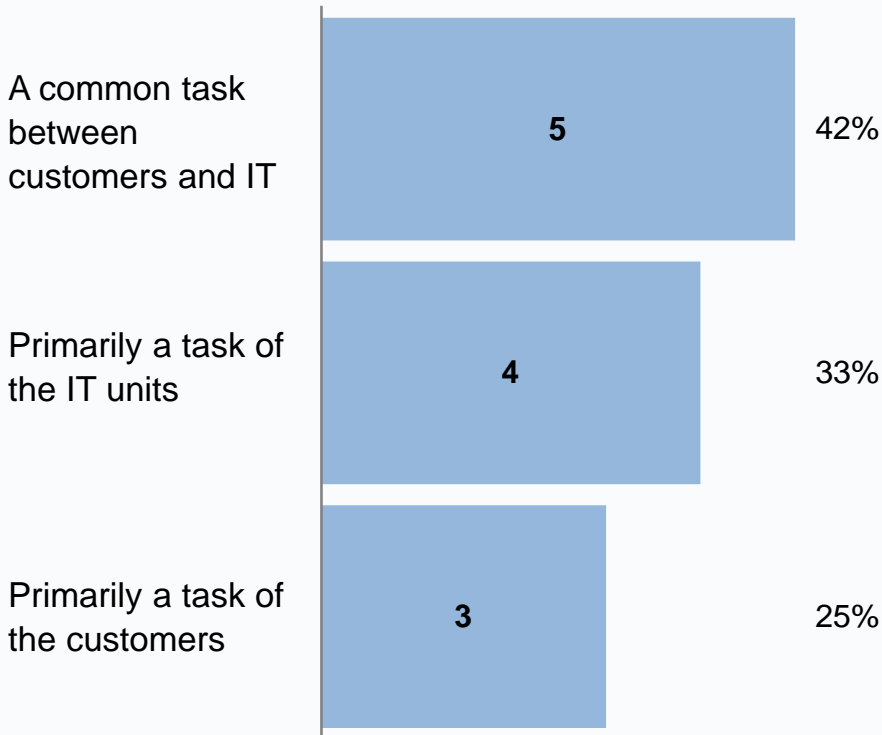
universe 11, change in rank

IT Demand Management

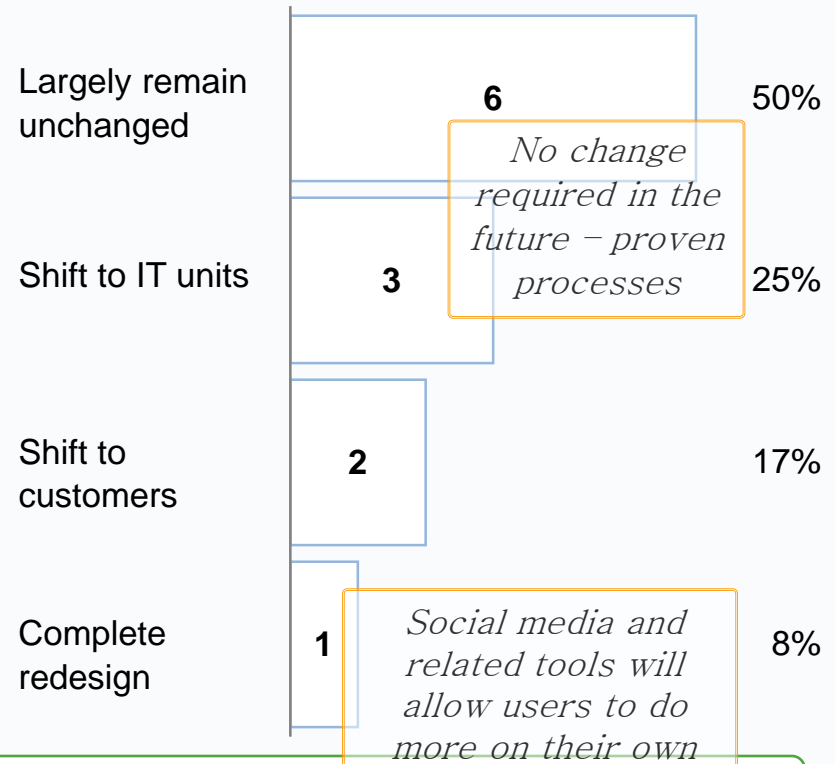
Demand Management is ...



At present



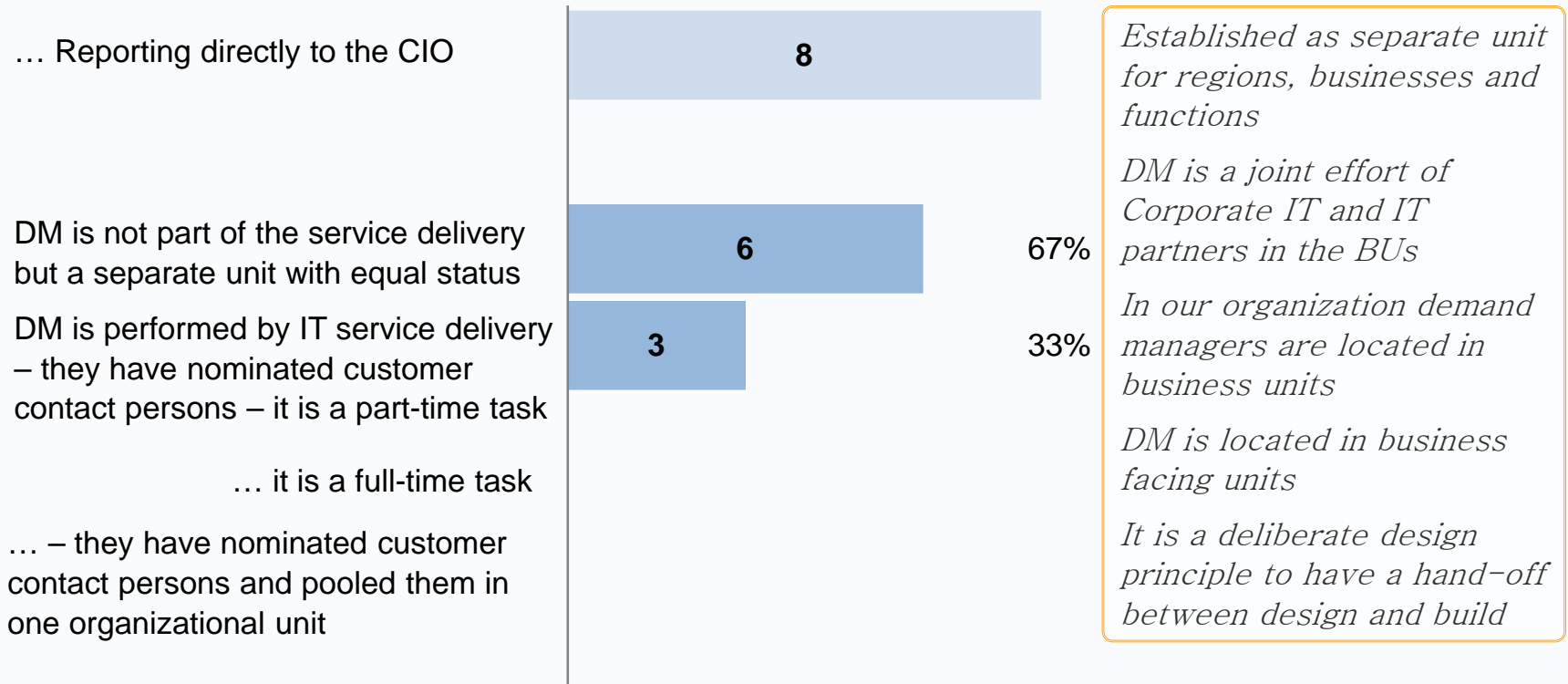
... In future



It seems that it is not decisive to whom demand managers organizationally belong – all variants appear among the enterprises and mostly they do not see reasons for change

IT Demand Management

In case the IT is partially or almost fully responsible for the demand management, it is organized as follows ...



The importance of demand management is recognized: in most companies demand managers report directly to the CIO and they are “independent” from the IT service delivery units

universe 10

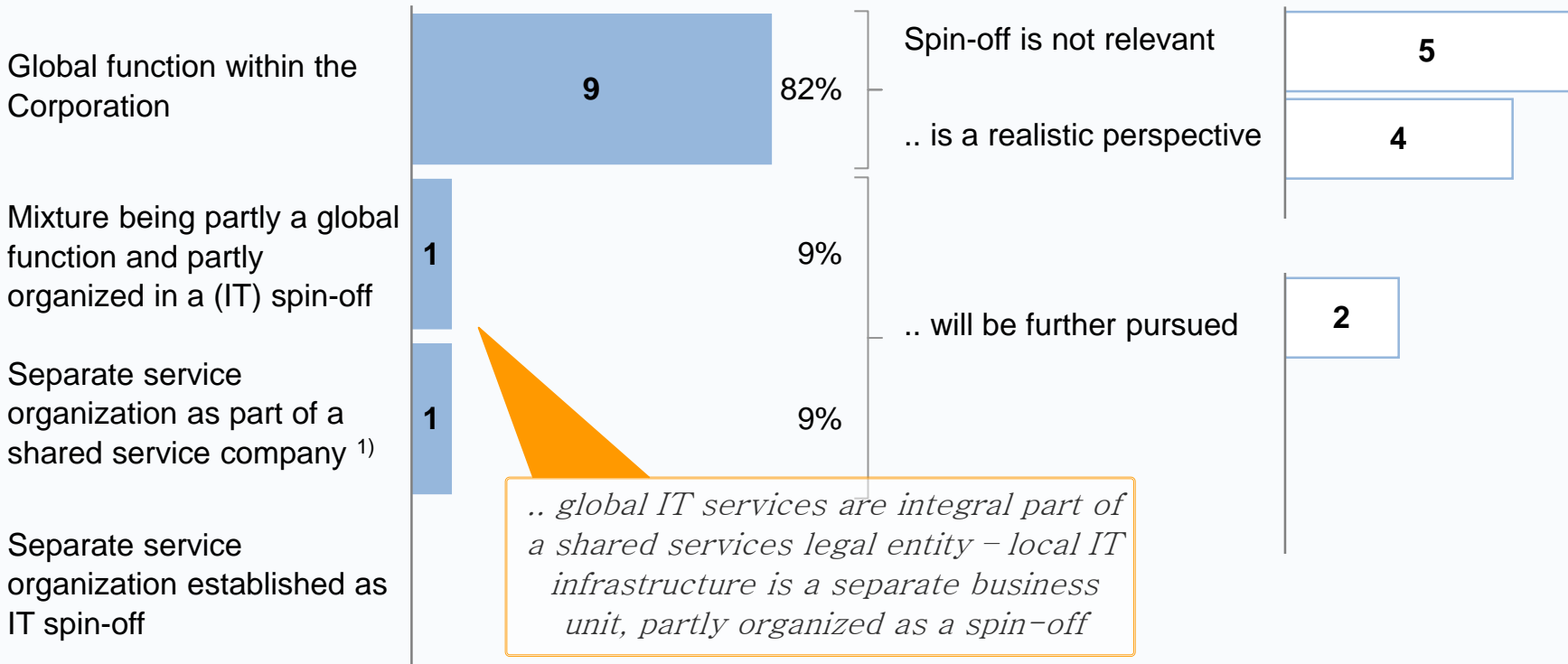
Global Function or Spin-Off

Our current IT is ...



At present

... In future



IT as a global function within the corporation is the dominant model – nevertheless, this could change in the long term since movement toward spin-off is a realistic perspective for nearly the half of companies has currently a global IT function

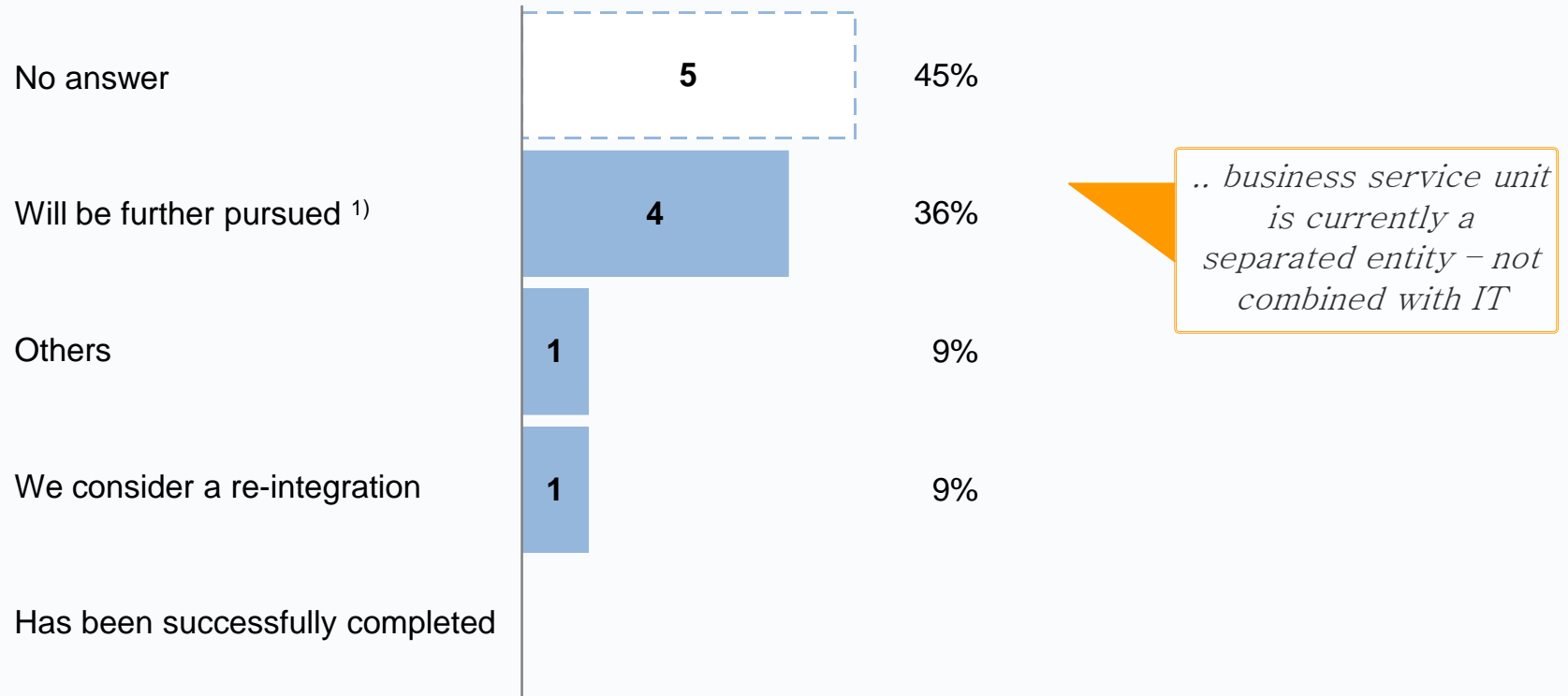
universe 11, 1) i.e. business services spin-off

Global Function or Spin-Off

Business processes and IT services as an integrated service offering
– in case of integrated solution already in place



At present



Integration of business services with IT services in a spin-off is currently an exception but if already established it is being extended / pursued ...

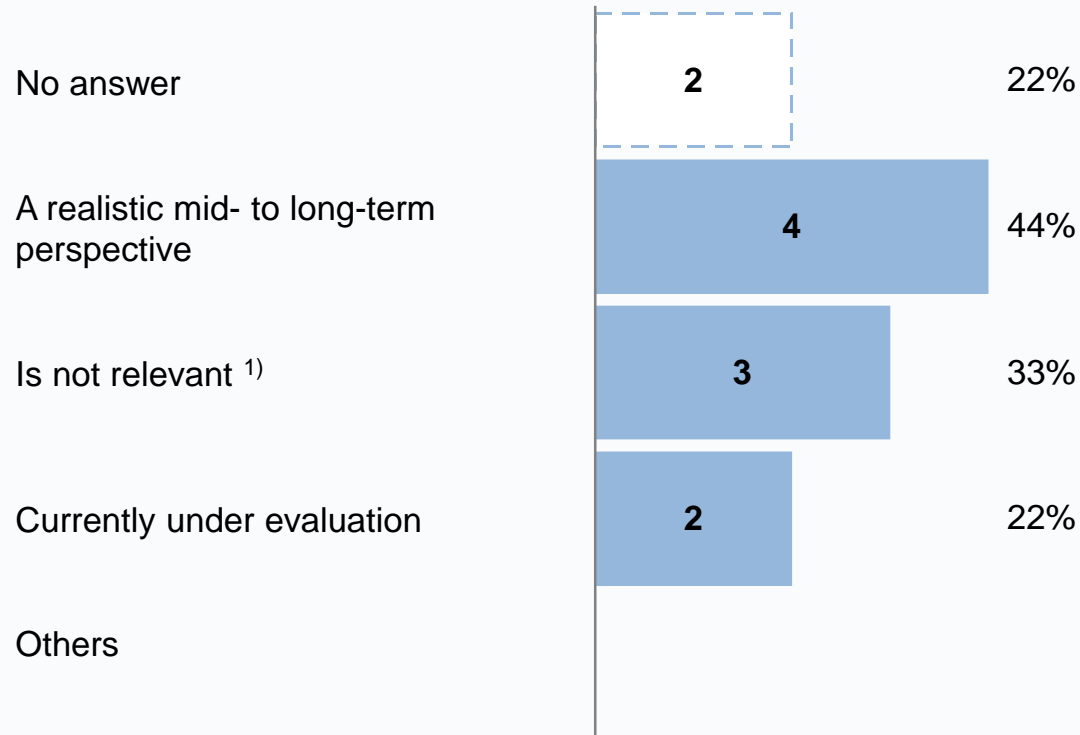
universe 11, 1) e.g. additional business processes from F&A, HR, SCM

Global Function or Spin-Off

Business processes and IT services as an integrated service offering
– in case of a separated solution



At present



▶ ... and remains a serious option for the future – over both the short and long term

universe 11, 1) e.g. due to strategic guidelines of the corporation

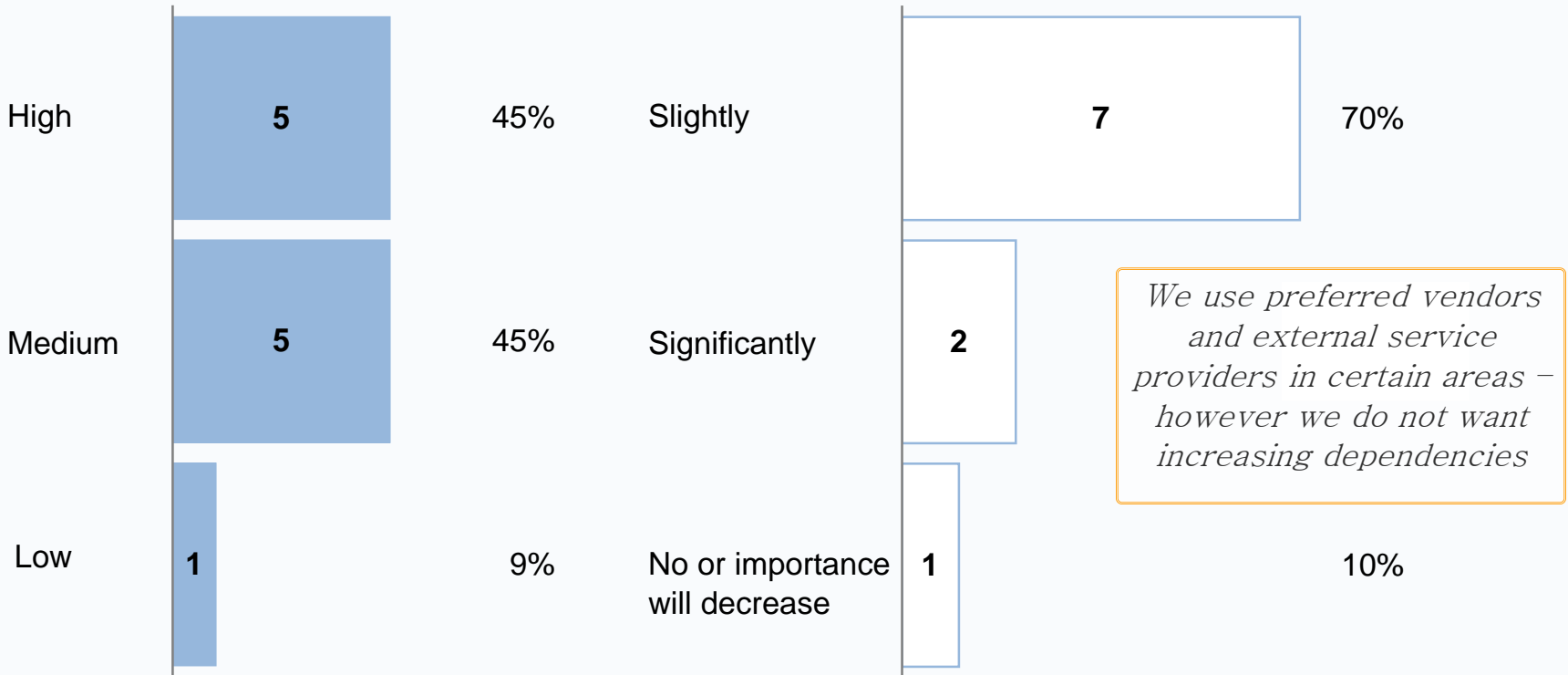
Partnerships, External Market and Outsourcing

Strategic partnerships are of relevance for your IT



At present

... In future (topic will gain importance)



▶ Strategic partnerships are already widespread in the universe of participating companies – therefore, a further increase in its importance can be observed but is limited (70% of companies expect a slight increase)

universe 11

Partnerships, External Market and Outsourcing

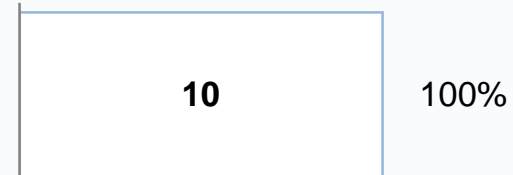
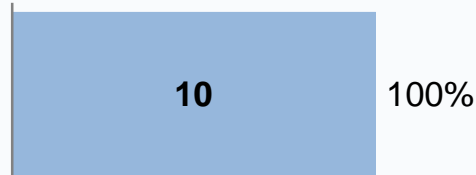
Strategic partnership (or cooperation) is understood as ...



At present

... In future

Long-term and intensive partnership / cooperation in the relevant areas



... Additionally as an option for a joint venture

... Additionally as an option for a (mutual) minority interest

The value of strategic partnerships is coming from people from different companies work together like being from the same company

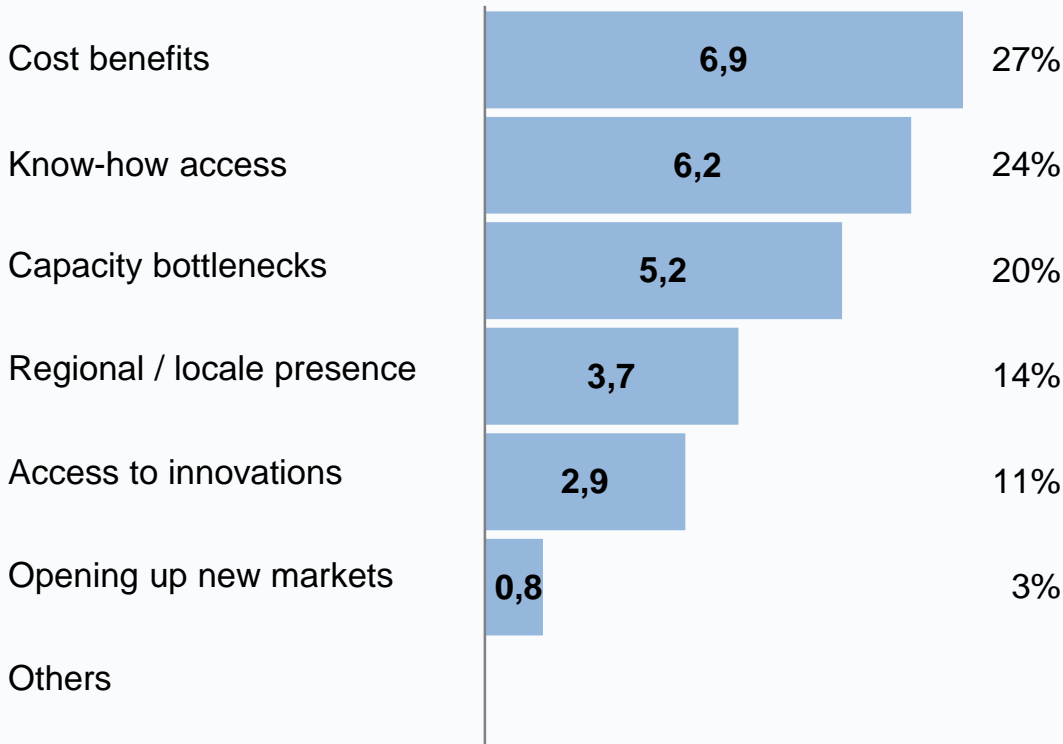
▶ For the present and the future strategic partnerships do not mean joint ventures or equity interests – as global function in a non-core area of the chemical & pharmaceutical industry such M&A activities are not accessible for the IT

Partnerships, External Market and Outsourcing

The driving factors for a strategic partnership are ...



At present ¹⁾



- *We consistently outsource for capacity bottlenecks and knowledge gaps*
- *We have always not enough capacity*
- *We use EoS benefits of our partners*

▶ The main business drivers for strategic partnerships are cost benefits (e.g. EoS or factor cost advantages of the partner), know-how access, and own capacity bottlenecks

universe 11, 1) weighted by rank

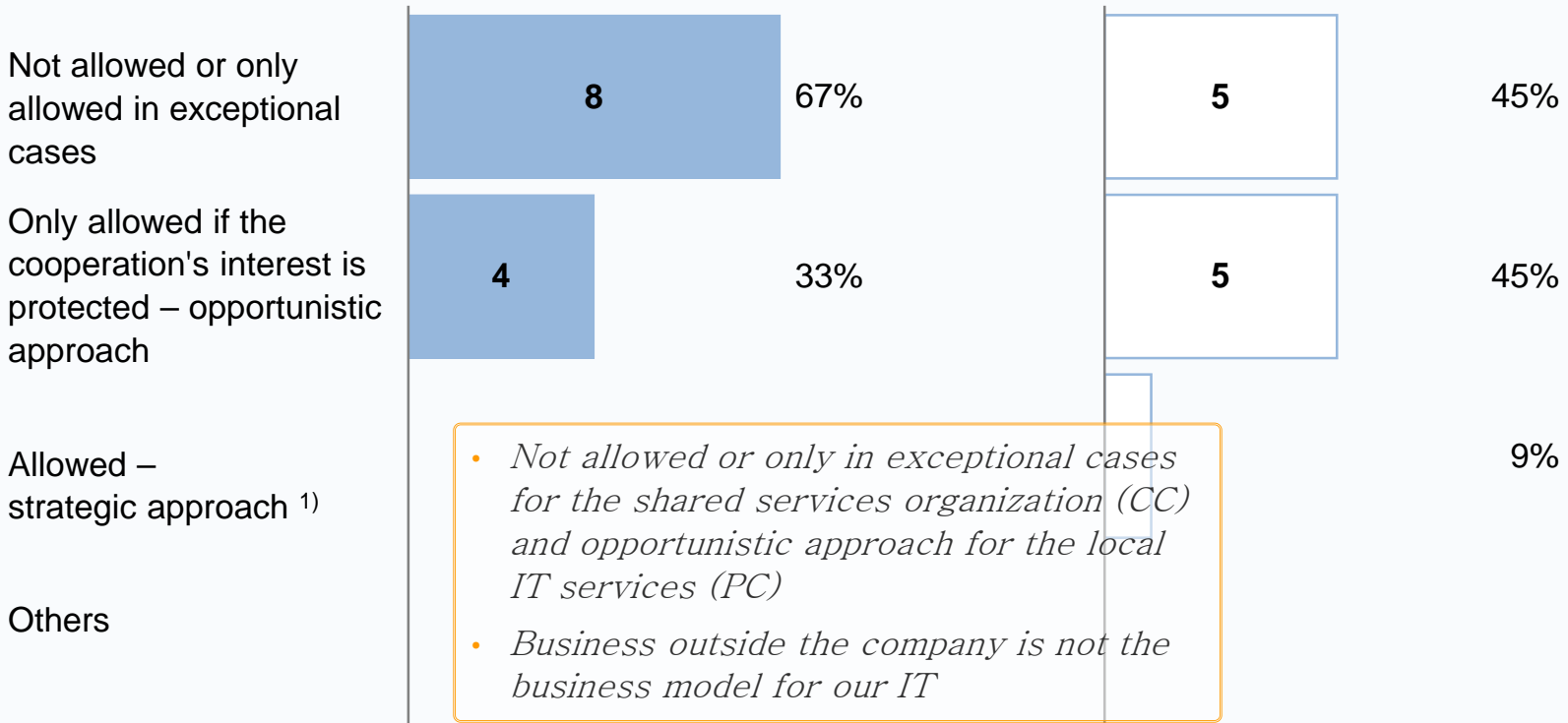
Partnerships, External Market and Outsourcing

Business with third parties – i.e. outside the group of affiliated companies – is ...



At present

... In future



▶ A corresponding picture in the area of business with third parties: entry into external markets is either not allowed or strictly limited by the corporation leading to a so-called opportunistic approach and questioning its sustainable success

universe 11, 1) among others a possible major motive for a spin-off

Partnerships, External Market and Outsourcing

The third party business accounts for about ... % of the IT revenue respectively the IT budget

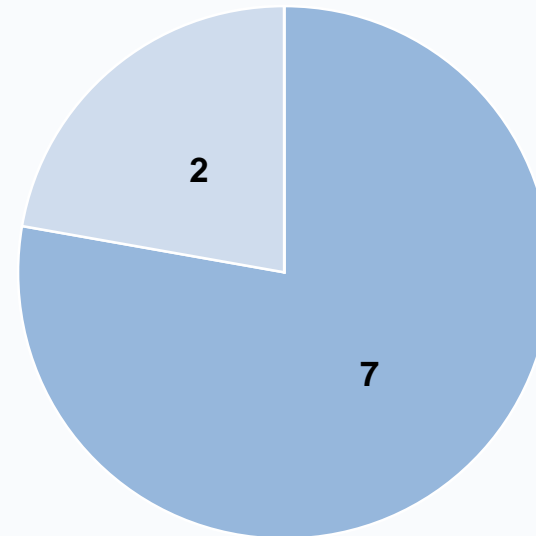
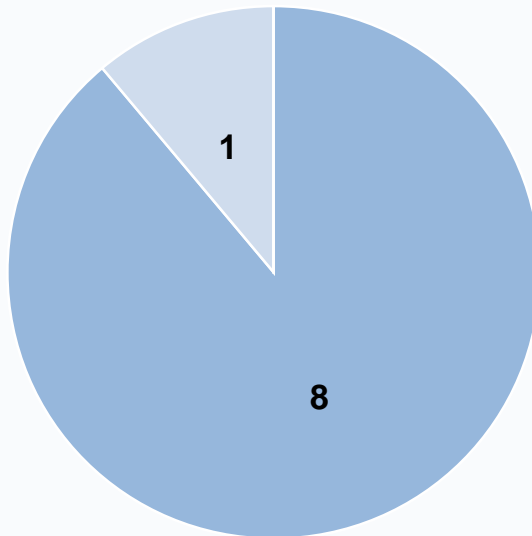


At present

... In future (in 5 years)

10% <= x < 25%

10% <= x < 25%



< 10%

< 10%

Resulting in a proportion of less than 10% of the IT revenue (or IT budget) for nearly all enterprises – picture is expected to be stable in the future

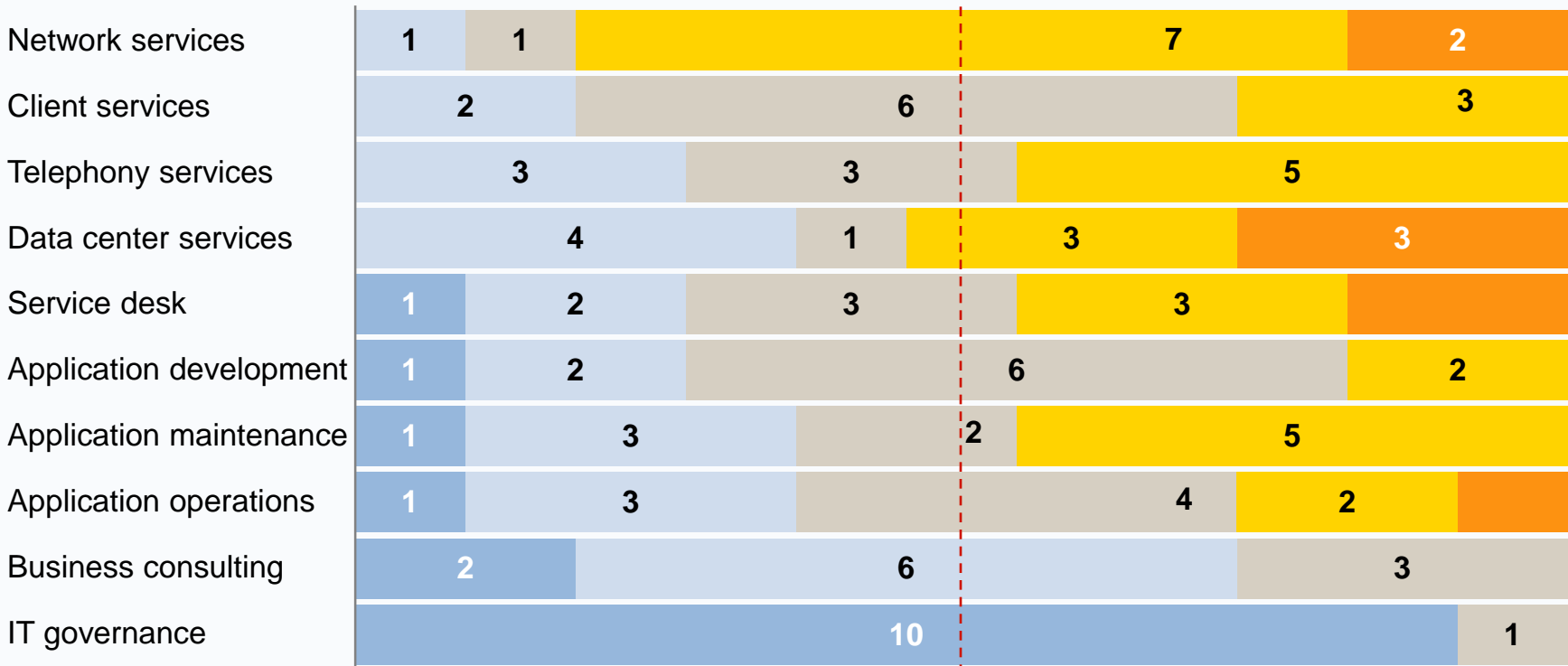
universe 11 (2 no answers)

Partnerships, External Market and Outsourcing

In the below listed IT service areas outsourcing takes place to the following extent ... (1)



At present



The closer an IT service is to business processes the less it's a candidate for outsourcing – IT governance is crucial in order to keep control over the IT provisioning process and therefore judged as a pure in-house task

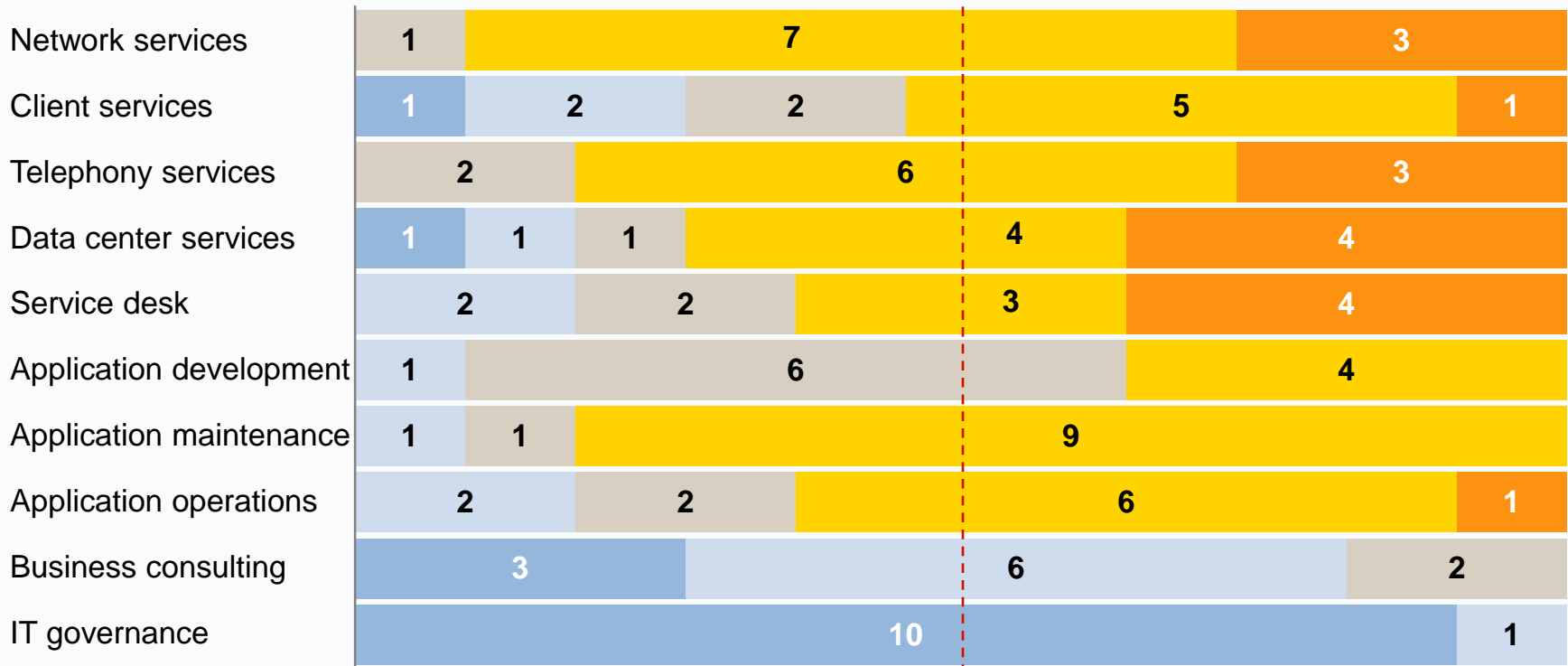
universe 11, no / little: selective: partially: largely: fully:

Partnerships, External Market and Outsourcing

In the below listed IT service areas outsourcing takes place to the following extent ... (2)



... In future



▶ The current level of vertical range of manufacture will even be developed towards an increased outsourced proportion – hot candidates are service desk, client services, telephony (VoIP), and application operations / maintenance

universe 11, no / little: [dark blue] selective: [light blue] partially: [grey] largely: [yellow] fully: [orange]

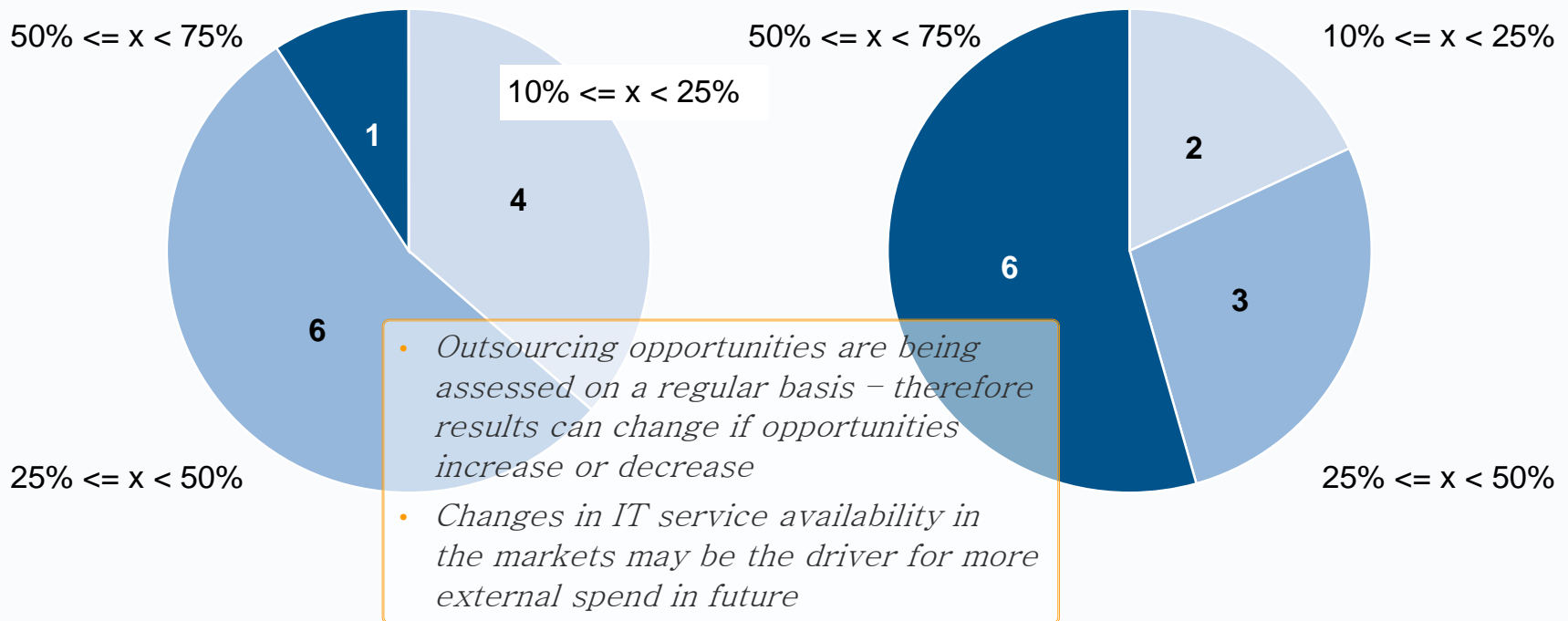
Partnerships, External Market and Outsourcing

The total external costs account for about ... % of the total IT costs



At present

... In future (in 5 years)



Due to this development, external costs will increase in the next five years reaching more than 50% of the total IT costs in 6 of eleven companies

Partnerships, External Market and Outsourcing

What is the best description of the outsourcing pattern followed by your IT?



At present



Currently, no clear outsourcing pattern in the industry – what can be said?: preferences for global concepts, combined with “best of breed” or partial bundling solutions including the attempt to install backup suppliers at least in selected (critical) areas

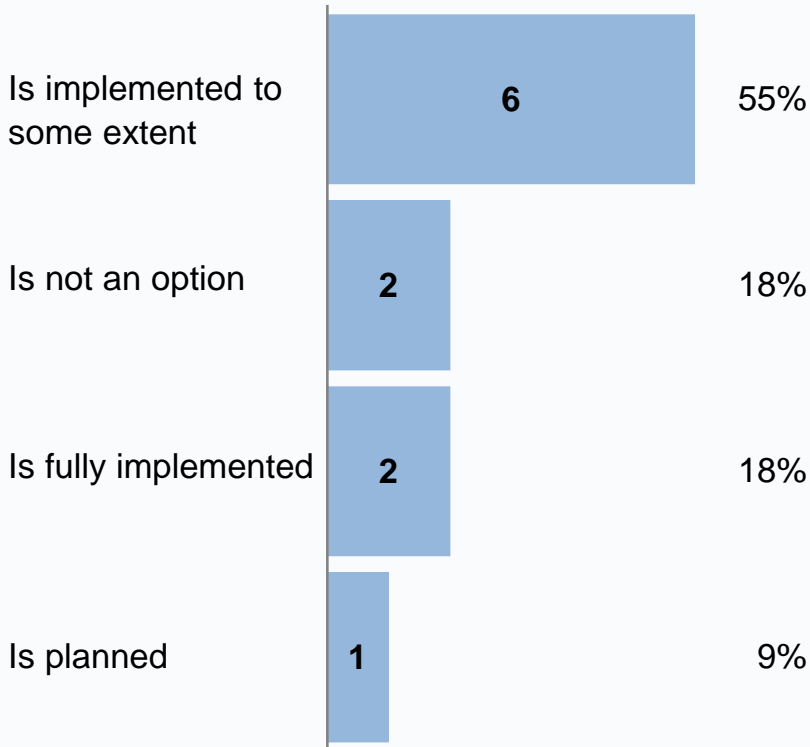
universe 11, fully: ■ partially: ■ don't: ■ no answer: ■ 1) i.e. for each IT service at least 2 providers

Partnerships, External Market and Outsourcing

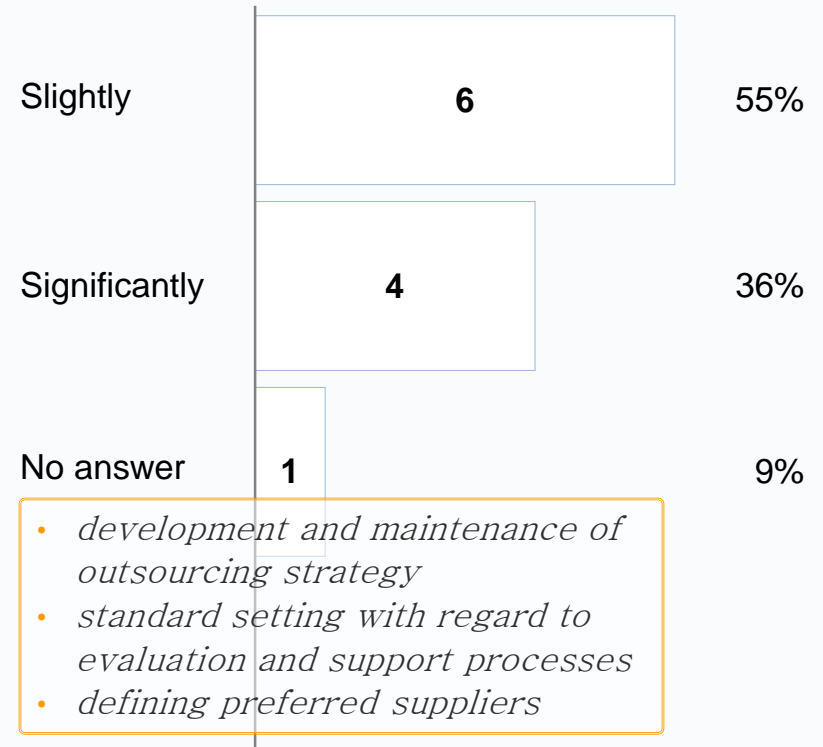
A central IT unit, responsible for ...



At present



... In future (topic will gain importance)



- *development and maintenance of outsourcing strategy*
- *standard setting with regard to evaluation and support processes*
- *defining preferred suppliers*

▶ Since outsourcing becomes more and more important the necessity for a central IT unit to manage the outsourcing related processes comprehensively is stated by nearly all companies

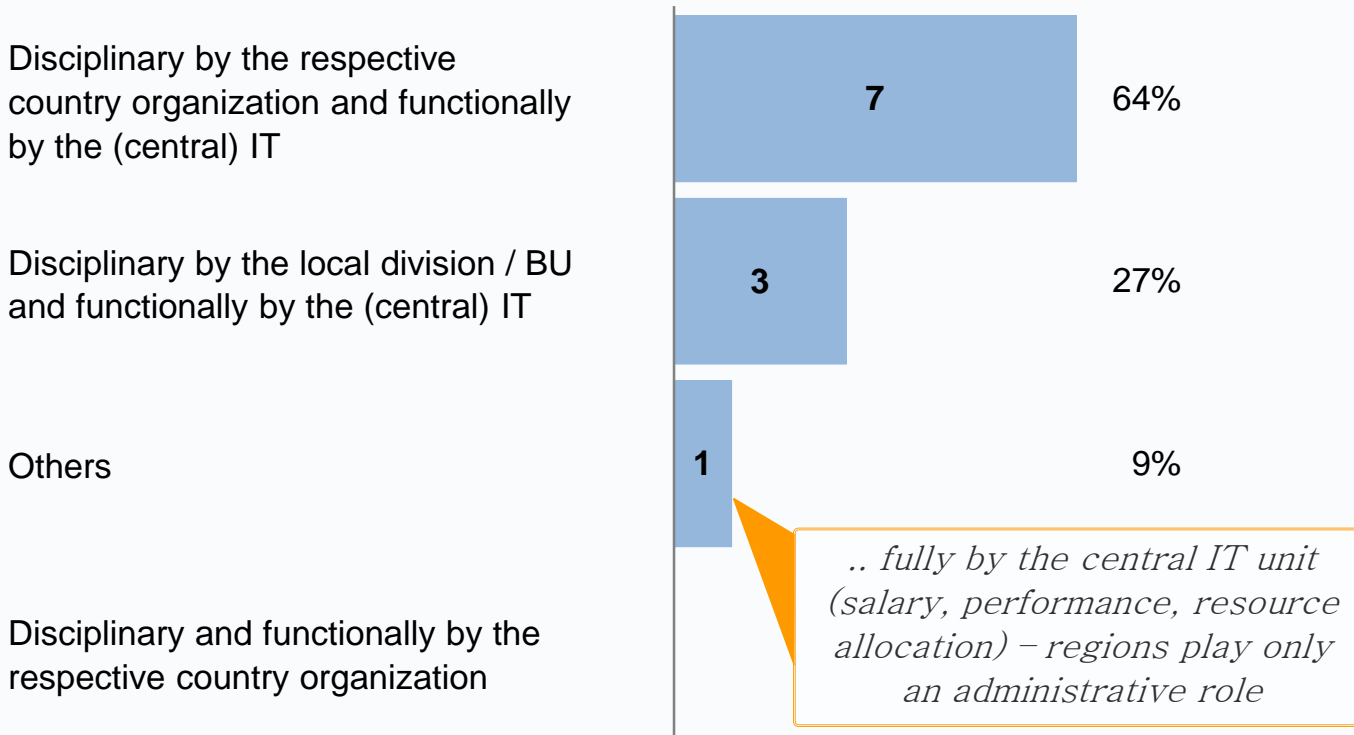
universe 11

International IT Management

Local or regional IT units are managed ...



At present



▶ Local or regional IT units are already functionally led by the central IT – independent de-central IT units are things of the past

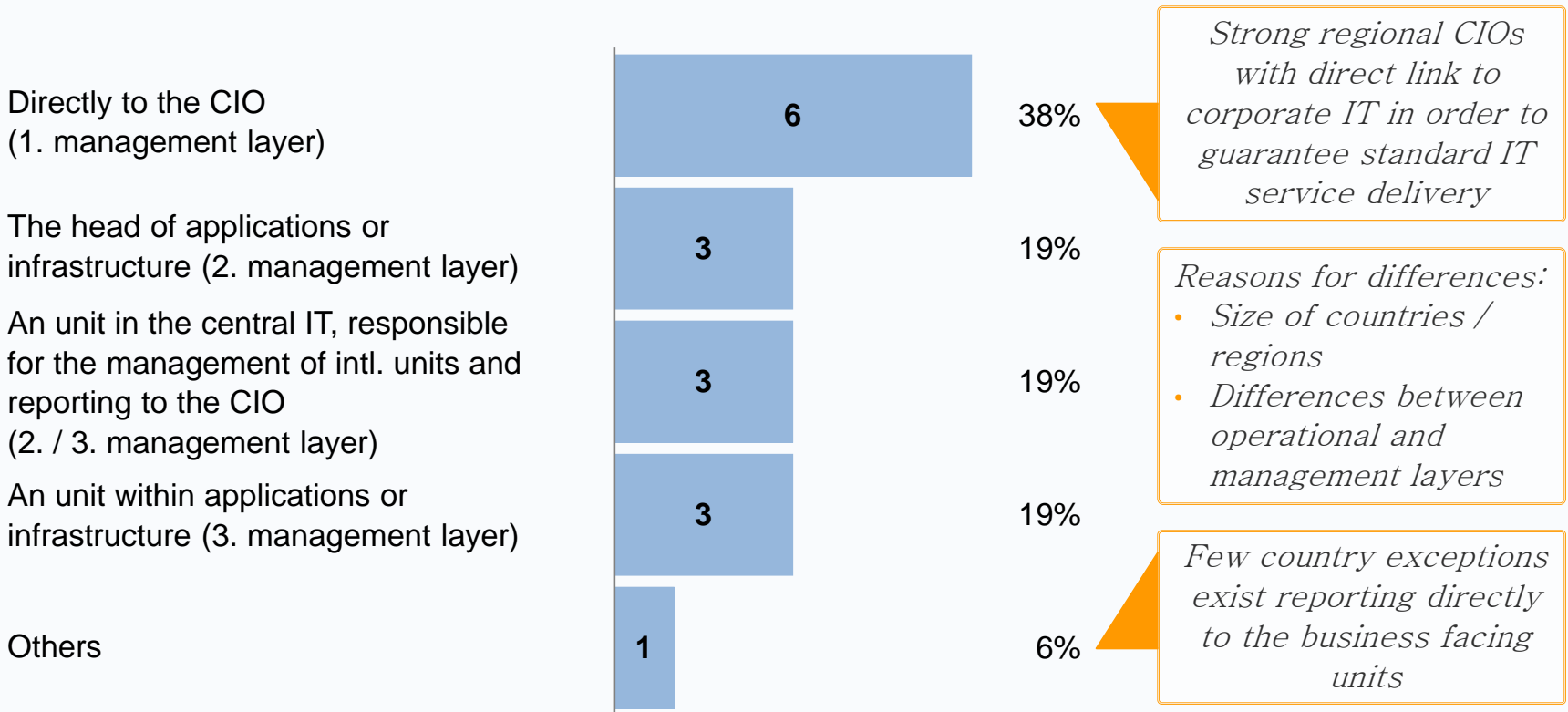
universe 11

International IT Management

In case of functional leadership by the (central) IT the local and regional IT managers report to ...



At present



Nearly in half of the analyzed corporations the regional / country IT units report directly to the CIO – probably in order to develop / facilitate a truly international service delivery approach

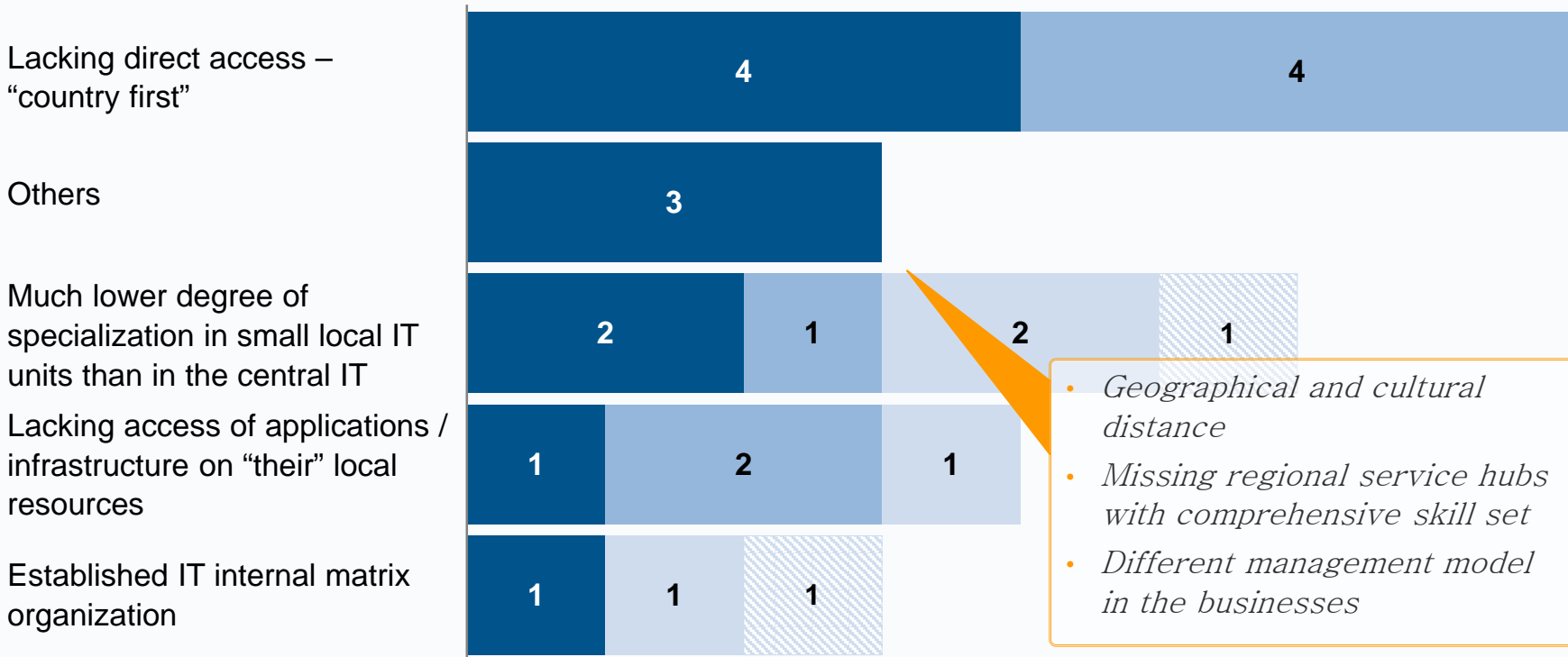
universe 11

International IT Management

An effective and efficient international leadership is hampered by the following circumstances



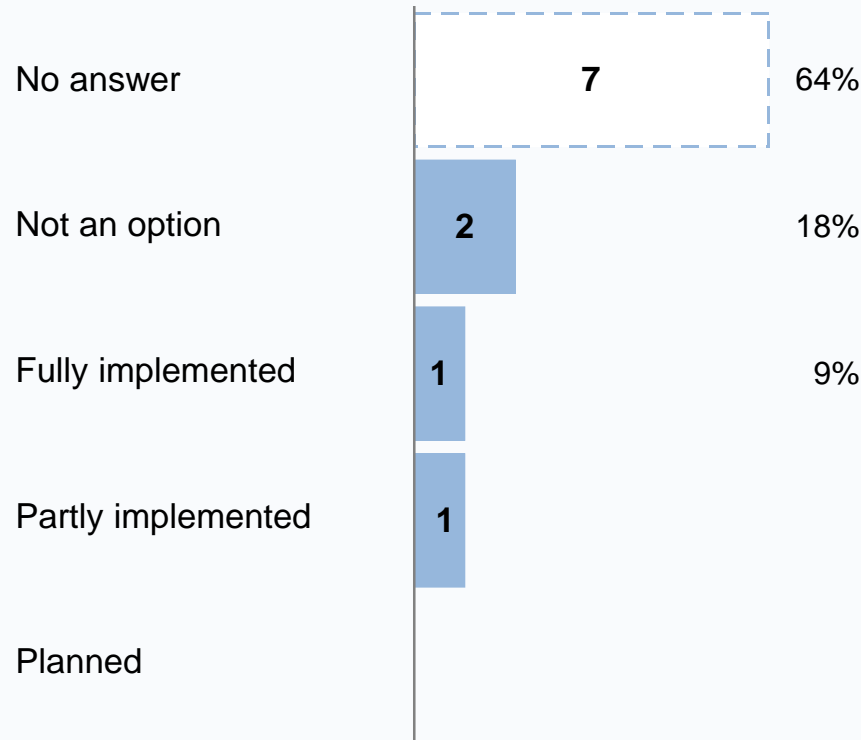
At present



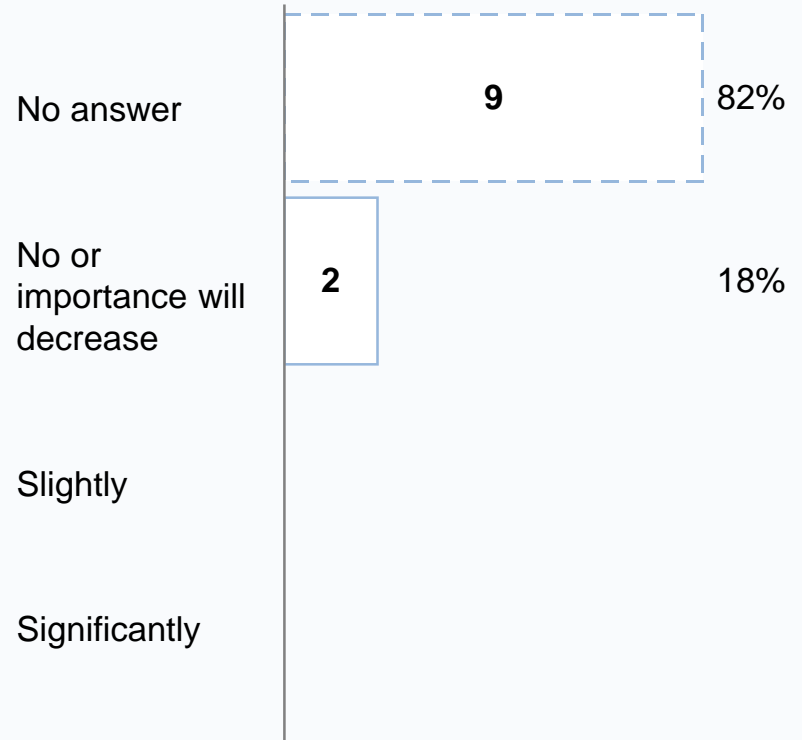
Nevertheless, lack of direct access (disciplinary), cultural differences, geographical distances, and the huge differences in capacity between the central IT and the IT in the countries / regions make effective and efficient world-wide management difficult

universe 11, rank 1: rank 2: rank 3: rank4:

At present



... In future (topic will gain importance)



In general, IT subsidiaries are an appropriate and possible way to overcome especially lack of direct access but do not play a significant role in the “real life” of the involved IT organizations ¹⁾

universe 11, 1) exception: one cooperation

- founded in 1991
- located in Eltville (near Wiesbaden), Germany
- independent

- focus on life science products, chemicals, (fast moving) consumer goods



- only senior and management consultants
- multi-disciplinary team (chemist, pharmacist, physician, mathematicians, IT professionals, economists, sociologist, psychologist)

- team oriented and customer focused approach
- dedicated to quality and striving for first class results
- fact driven and application of sound methodologies

- partner network for turnkey solutions

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