

Infrastructure

Weathering the storm

Establishing a playbook for critical infrastructure operations

The coronavirus exposes critical infrastructure to a risk environment which is unprecedented in recent history. In order to maintain resilient operations establishing a playbook how to run critical infrastructure these days is key.



Situation today

A pandemic has been part of risk inventories of large corporations for several years. However, the accelerating speed with which the coronavirus spreads across global regions comes as a surprise. Research organisations and networks uncover new facts almost on a daily basis.

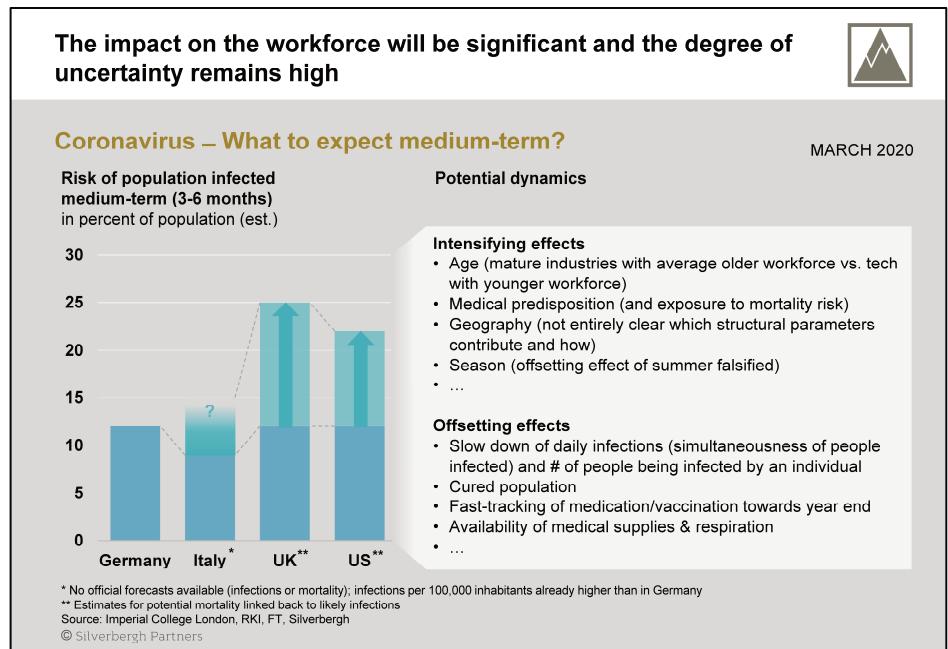
Medical researchers fast-track efforts to come up with medical interventions which in the best case will be available by year end.

Politicians and financial experts carve out policy mechanisms targeted at coping with the economic consequences of the pandemic – short-term and longer-term.

Although corporations also need to review their exposures and identify mitigation mechanisms, maintaining robust operations of critical infrastructure (e.g. IT, chemical plants, utility assets, power plants, chemical plants & sites, ...) today is critical.

Hence, as vulnerability of operations increases, stabilising the management response and reducing complexity is key in order to maintain operational resilience.

- **Shareholders:** Profitability of business and stable cash flows.
- **Employees:** Stability of employment and compatibility of private and professional demands.
- **Regulators & public:** Stability of operations & uninterrupted service; compliance with general rules how to conduct business.



What stakeholders expect

Clearly, exposing critical infrastructure to unnecessary vulnerabilities not only puts companies businesses at risk but may compromise expectations of the broader stakeholder environment. Stakeholder expectations are the following:

- **Customers:** Access to services (whether these are utility services, infrastructure services to large industrials or payment operations in case of banks etc.).

Under disruptive conditions as we experience them today, some of these expectations are conflicting. Resolving these conflicts requires an assessment of trade-offs, resolution options and active communications with all stakeholder groups. Communication will not only have to address needs and requests tactically. It has also to be set up to rationalise and document management decisions and behavior after the crisis.

How risks materialise

Understanding how risks materialise will help to guide developing adequate responses. Some risk exposures triggered by the pandemic are worth reviewing (examples).

- **On company level:** A company provides the business and operational framework for critical infrastructure operations and the associated businesses. As such key risks are ...
 - **Inherent business profitability risk** and financial consequences driven by the evolution of revenues vs. costs.
 - **Credit/ counterparty risk** (delayed cash-inflows and exposure to defaults of counterparties or replacement risk).
 - **Reputational risk** and related financial consequences.
 - **Operational risk** with regard to core administrative processes and responsibility for the overall operating framework.
 - **Liquidity risk** and implications for refinancing opportunities and refinancing costs.
 - ...
- **On operations and asset level:** On this level, management needs to maintain the ability to operate critical infrastructure and assets in order to serve customer needs.
 - **Staff availability risk** (own personnel).
 - **Procurement stability risk** (services incl. agency staff and utility services, consumables, investment goods and parts) driven by operational risk of non-availability and counterparty/ credit risk in case of default.
 - **Shipment volatility risk** driven by ramp downs or cycling of customer demand influencing sales and implying operational risk associated with maintaining the minimum viable level of critical asset operations and financial risk as revenues and costs are impacted.
 - **Cyber risk** may impact stable asset operations as more staff requires remote access to company networks. The likelihood of cyber attacks increases.
 - **Risk of social unrest** and impact on integrity of sites and interference with core operations. Also likelihood of sabotage increases as social instability rises.
 - ...

Mitigation activities might reach across several of the above risks. They would need to be detailed out specifically addressing every risk driver but could be aggregated up afterwards. Examples of mitigation actions are:

- **Amended work/ shift models** (including multi-skilling of staff). This however requires training upfront.
- **Insourcing of activities** and hence less dependence on contractors or staff remotely located.

- **Customer assurance** and agreement with customers on service levels and adjustment of demand. This allows concentration of own activities in certain sites/ locations. Potentially, value-added services and products could be offered helping customers to handle todays situation.
- **Workforce motivation and relations** by offering relieve from daily burdens and by providing transparent and timely communication.
- **Build up of redundancies** (e.g. procurement contracts with optionality or sourcing of critical asset components; diversification and tiering of suppliers; risk assessment of critical supplies and parts with options to establish own stocks, ...).
- **Financial hedging** pegged to procurement & sales of commodities or exposure to exchange and interest rates (on company level).
- ...

Playbook for critical infrastructure operations

The objective of a *playbook for critical infrastructure operations* is to create stability in the management response to an environment which is exposed to fundamental discontinuities.

- **Faster response** to operational needs and a rapidly evolving risk environment.
- **Reduction of operational instability** by introduction of amended (temporary) operating framework stress-tested against risk-drivers, introduced and practiced prior to materialisation of risks.
- **Clarity of responsibilities and accountabilities** (line organisation vs. committees/ organisation by exception).
- **Reduction of complexity** through a clear protocol how to handle the situation across organisational boundaries.
- **Improved management oversight** through clear milestones by initiative/ workstream and reporting format (including KPI).
- **Mitigation and containment of financial consequences** by integrating risks on operational and asset level into corporate financial risk perspective.
- **Documentation of management decisions** for post crisis communication.

How should a *playbook for critical infrastructure operations* be established?

1. **Understand & assess:** The evolution of how the pandemic spreads should be continuously monitored. If critical infrastructure is integrated into global supply chains, exposure to these supply chains should also be understood. This can be a risk as well as an opportunity

as production could be shifted. The same holds also true for suppliers and customers. Regulatory responses should be understood as they not only have implications for operations but also for dealing with the financial consequences of the pandemic (e.g. short-time compensation, fiscal programs, ...).

2. **Transfer & apply:** The contextual risk environment needs to be linked back to company operations. It should facilitate highlighting vulnerabilities of organisational units or critical infrastructure. Areas of intervention and mitigation should be prioritised considering likelihood and impact if certain events occur. This perspective also provides the structure to identify mitigation activities which then also informs how to amend the organisation (e.g. shift models).
3. **Organise & stabilise** In an amended organisational setting not only organisational structure gets addressed. Also, roles and responsibilities will need to be updated to incorporate mitigation activities. In this effort, the decision needs to be taken whether tasks should be integrated into a line organisation or whether they should be dealt with in a committee setting. Two key drivers will influence the decision, a) the degree of exception of the respective task and b) the number and complexity of interfaces.
4. **Run & adapt** Once the amended organisation is established, it needs to develop a work routine. This requires discipline throughout the organisation resulting in a more stable and resilient operational set-up that will drive individual behaviour throughout the organisation. If this is achieved, the journey is not completed but a key part of the mission is achieved. As more risks unfold or realities change, operational adjustments can be made along the lines established already in steps 1 & 2.

There is not a ‘one size fits all’ solution. Being specific and avoiding generic approaches ensures a high degree of effectiveness, rapid response to open issues and mitigation of risk.

In the transition: Staying in control

How can the transition be managed and how can it be ensured that management is not overwhelmed by complexity?

We strongly recommend establishing a program management office (PMO). This can either be integrated into a committee setting or a line function. The obligations of the PMO are ...

- **Manage transition process** to keep track of activities by workstream/ initiative, identify interfaces between activities and facilitate alignment. Prepare and update integrated management reporting.
- **Document management decisions** and rationales for addressing trade-offs.
- **Mobilisation** of corporate resources in alignment with management as new situations evolve.
- **1st point of contact** beyond established reporting lines as new situations evolved, rapid responses are required and obligations are not defined. This only holds true if no other rapid response mechanisms are in place and could be easily activated.
- **Stakeholder communication** might be conducted or supported by the PMO depending on whether a corporate communication functions exists. As such, the PMO can play a more or less active role in stakeholder communication. As communication needs to be routed in a coronavirus fact base, this expertise is most up to date and accurate at the PMO.



subject

Resilience



The PMO should report into top management to ensure instant decision making and organisational alignment.

How to proceed?

As long as there are still degrees of freedom to choose a management approach, a timely decision should be taken how the company and critical infrastructure operations should be managed through the crisis.

Under normal circumstances any of the above steps would be conducted thoroughly and backed up by well-founded analysis. In todays environment, the above outlined process would need to be fast-tracked and conducted in a very pragmatic and truncated manner.

Outlook

It is to be expected that once the infections decrease, the decision needs to be taken whether to release restrictions

and to convert back to a ‘normal’ operating mode as practiced prior to the pandemic. It should be anticipated that operations might be confronted with a backlash of increasing infections. Hence, it might be advisable to continue in the amended ‘new’ operating mode until these backlashes can be ruled out. This however should be subject to a risk-benefit assessment once the situation occurs.

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