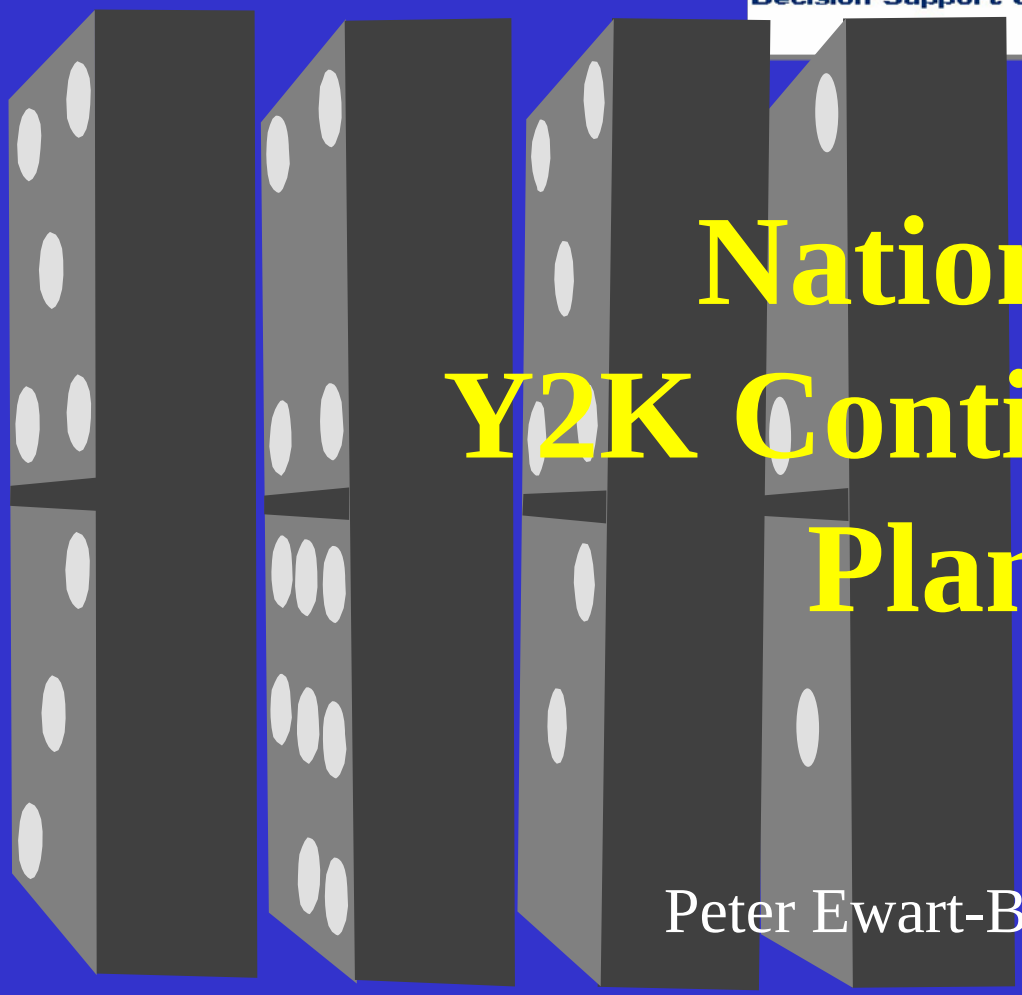
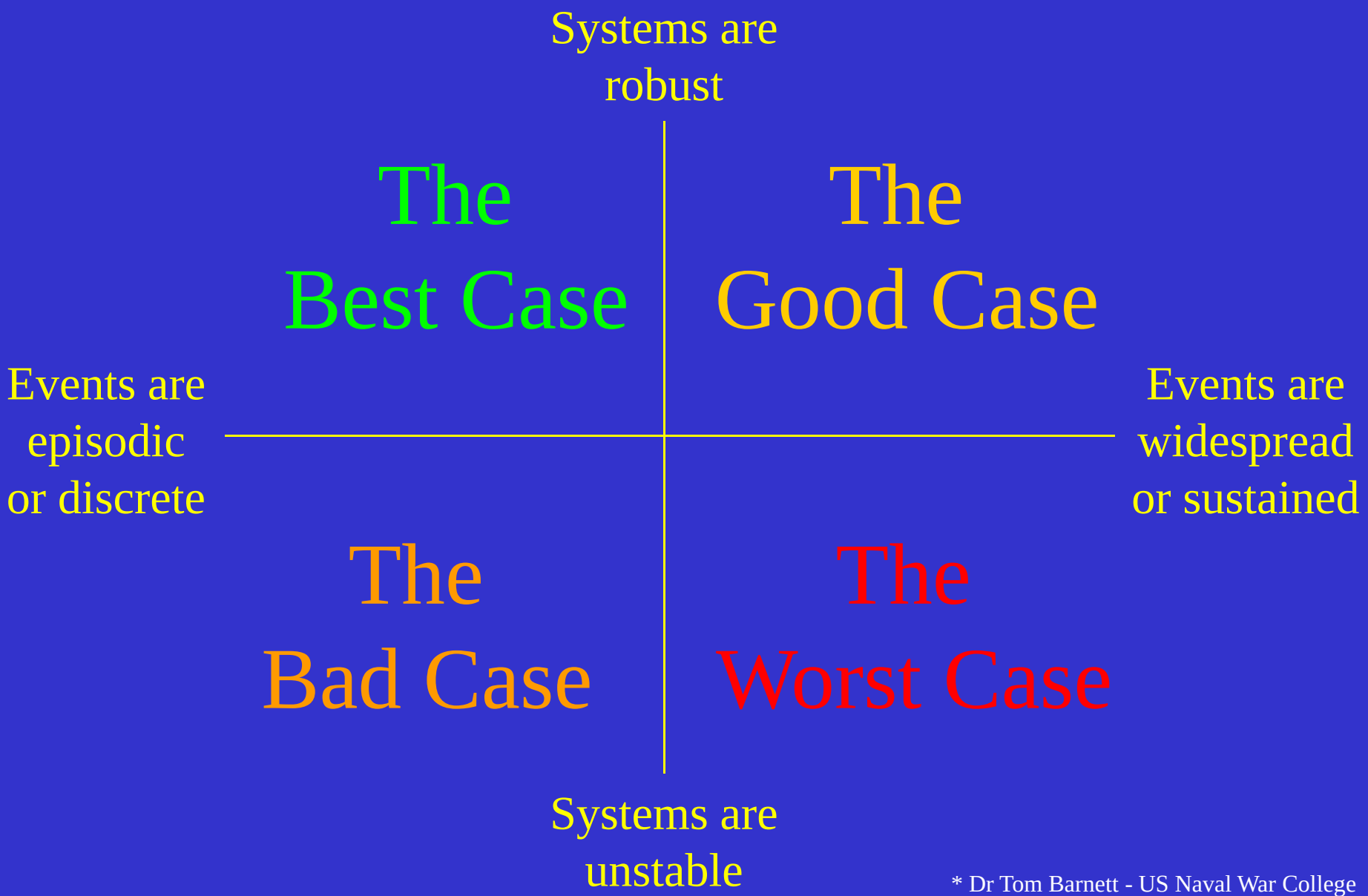


National Y2K Contingency Plan

Peter Ewart-Brookes

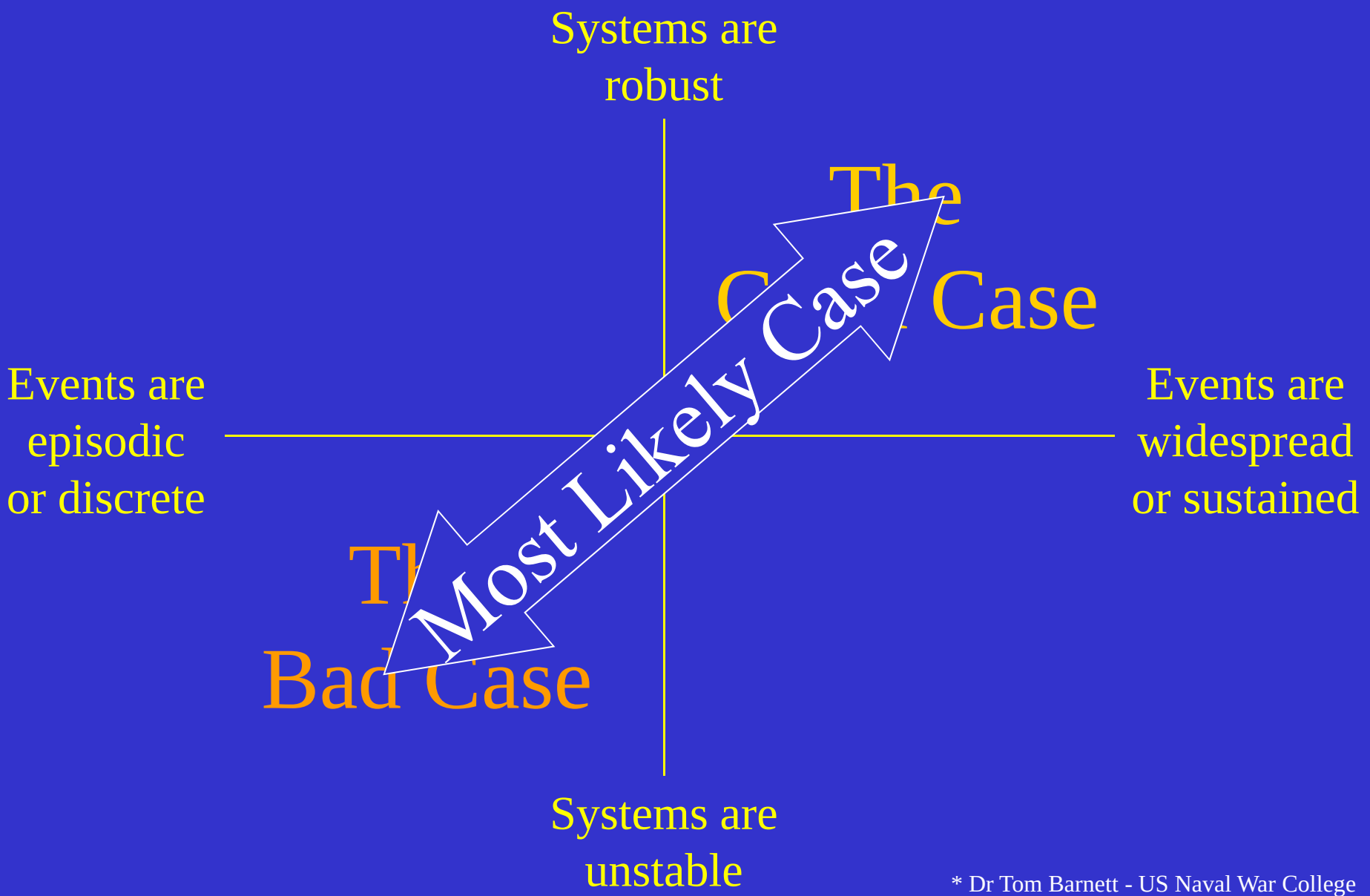
"Before we can prepare for Y2K, we have to determine the severity of the problem. Heads, it will be a minor nuisance. Tails, it will be the end of civilization as we know it."

Four Scenarios*

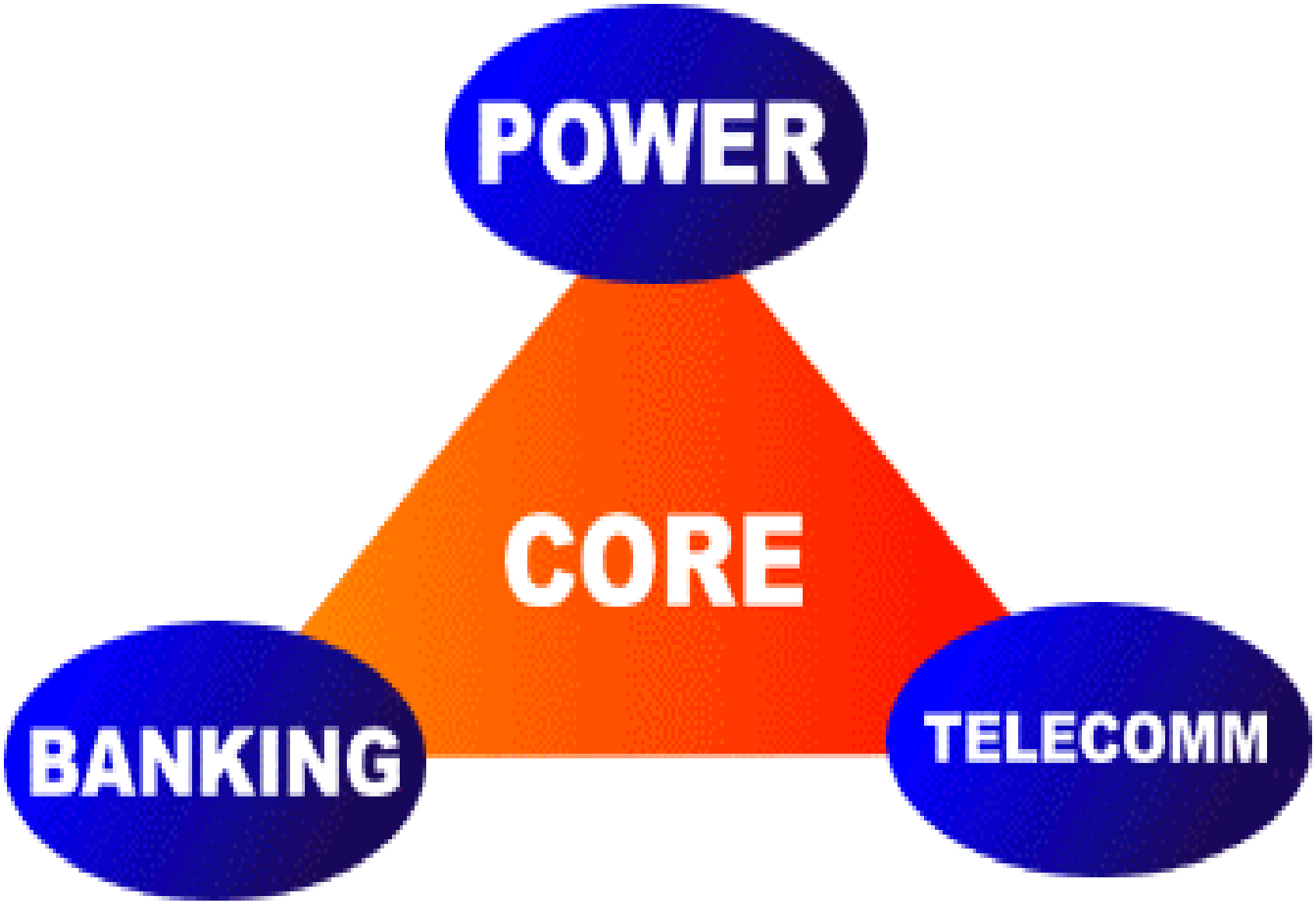


* Dr Tom Barnett - US Naval War College

Four Scenarios*



* Dr Tom Barnett - US Naval War College



By the Webmaster at www.y2knewswire.com

International Perspective

Gartner Group

Rating 3:

- 40% chance of utilities black-out during January
- 10% chance of financial sector failure during January
- 50% of telecommunications failure during January
- 30% chance of total infrastructure failure

Global2000 Group

Recommendation to “Green”:

- Compliant

The Worst Case

If Gartner is right:

Power has 40% chance of total failure
Banking has 10% chance of total failure
Telecomms has 50% chance of total failure

Question:

How robust is South Africa; what is the chance that none of them will fail?

The Worst Case

Answer:

As it turns out the probability of multiple events NOT happening is easy to calculate.

It is (100% - the probability of the first event happening) x (100% - the probability of the second event happening) and so on…….

The Worst Case

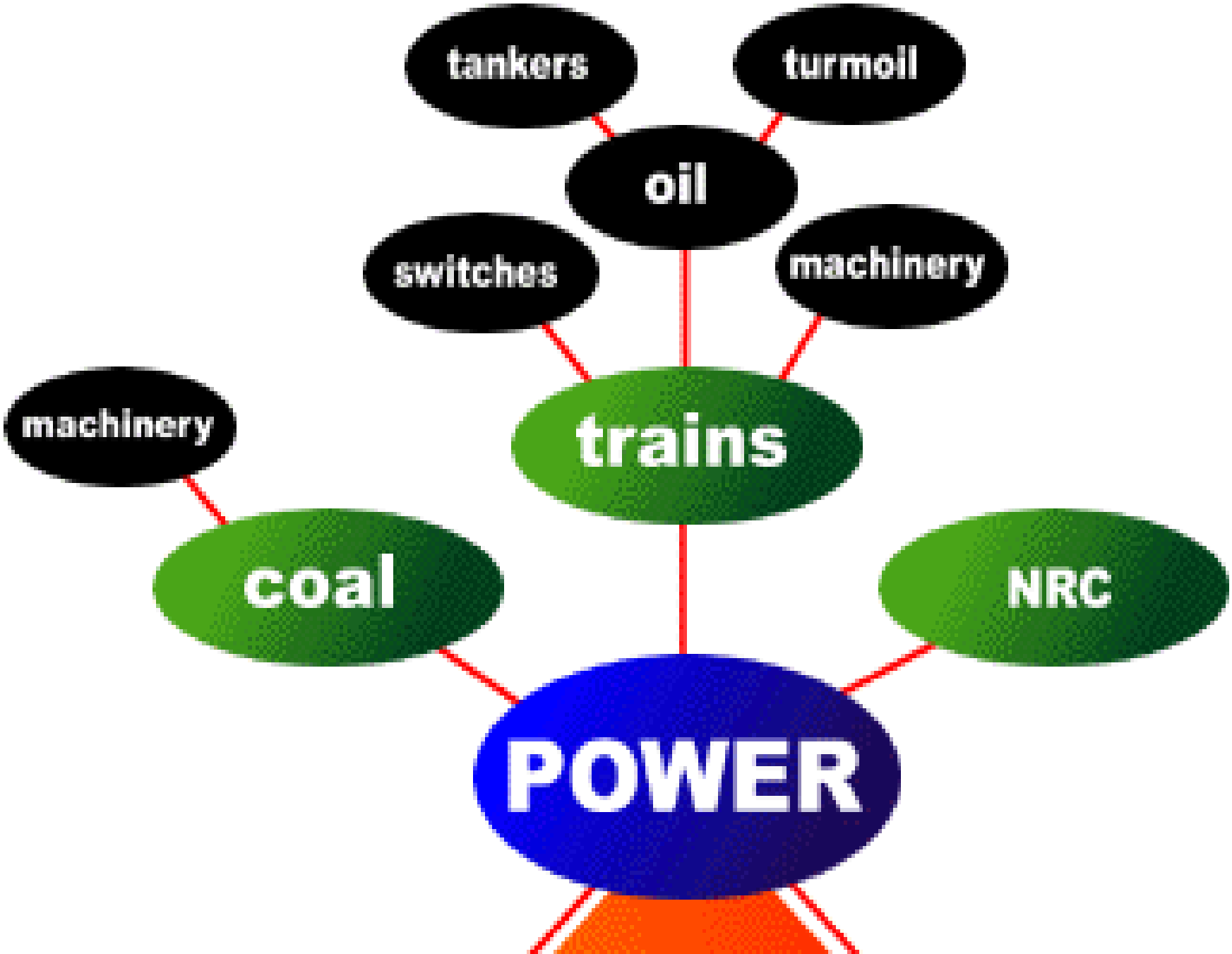
Answer cont.:

Therefore, for our example, there is:
60% x 90% x 50% = 27% chance that none of the 3 sectors will fail.

Accordingly there is 100% - 27% = 73% chance that at least one of them will fail.

…….And that one failure will cause the other two to fail, so there is actually 73% chance that all three will eventually fail.

Bringing in Secondary Factors


tankers
turmoil
oil
switches
machinery
machinery
trains
coal
NRC
POWER

Bring in Secondary Factors

Assuming that power has a 40% chance of failing on its own, consider the things on which power depends:

- Suppose there is a 10% chance of coal not being available
- 20% that trains wont run
- And a 10% chance that national control systems fail

Question :
What is the overall chance of the power industry staying up?

Bring in Secondary Factors

Answer :

Take 90% x 80% x 90% x 60% to get 39%.

That means there is a 61% chance that at least one of these elements will fail with sufficient force to bring down the power industry.

So the CORE calculations now change.

Instead of power having an isolated 40% chance of going down, it now has a 61% chance of going down when you consider its dependencies!

Bring in Secondary Factors

……..But the calculation goes much further than that!

You have dependencies on rail switching computers, the dependence on the correct operations of the rail machinery and the dependence on fuel.

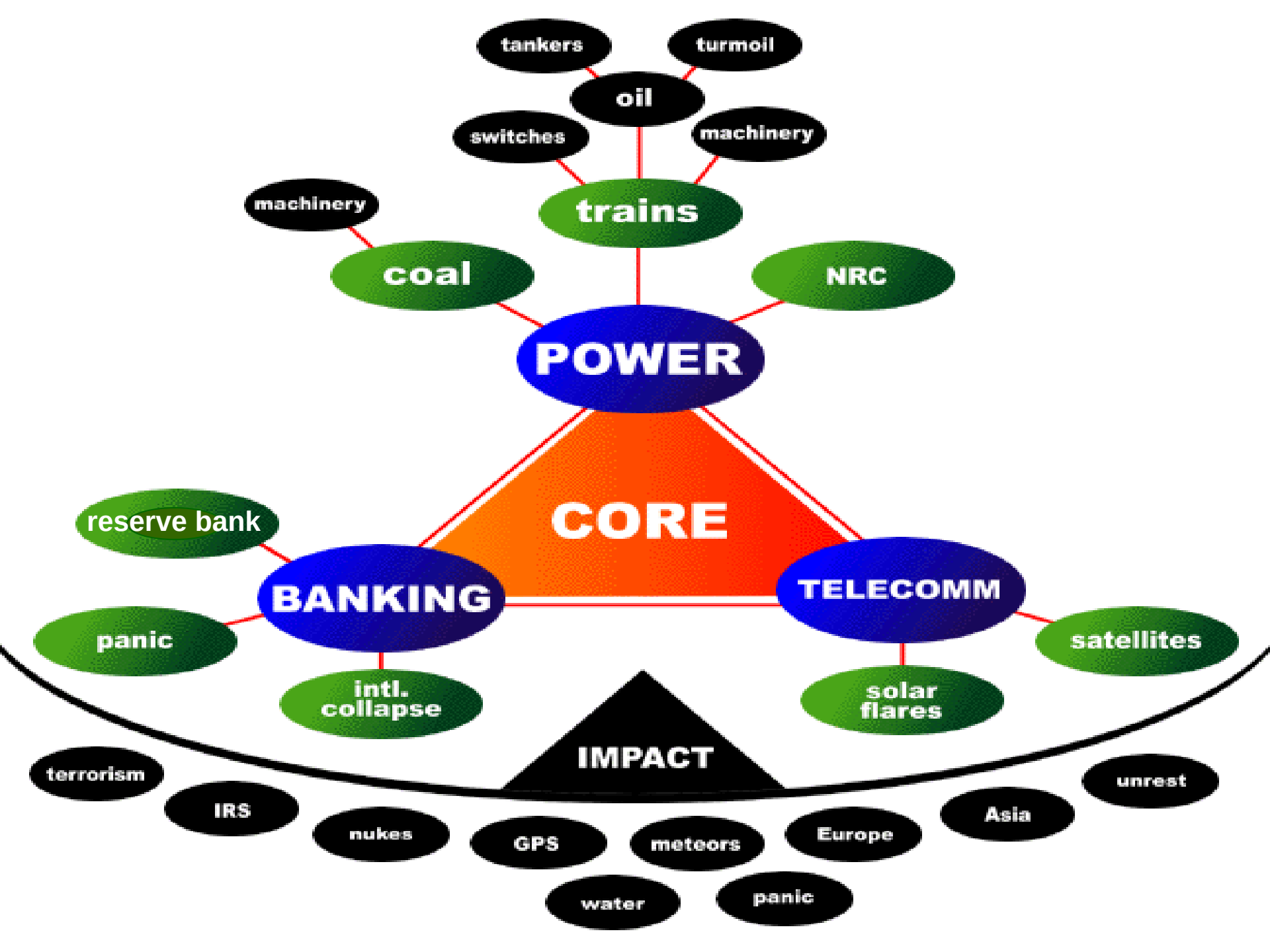
Lets put the odds on the above three as:

Switches = 5%,
Machinery = 5%
Fuel = 8%

Bring in Secondary Factors

Using our “best guess”on allocating the probabilities of each item, and doing the same mathematics, we find that the overall chance that the power industry will stay up is 31%.

That is, the chance it will go down is 69%


tankers
turmoil
oil
switches
machinery
machinery
trains
coal
NRC
POWER
CORE
reserve bank
BANKING
TELECOMM
panic
satellites
intl. collapse
solar flares
IMPACT
terrorism
IRS
nukes
GPS
meteors
Europe
Asia
unrest
water
panic

Conclusion

Performing the similar calculations on the other core elements, the banking group ends up having a 54% chance of failing and the telecomms group has 68% chance of failing.

Consequently, if the the statistics to hold true, then the overall chance of Y2K bringing this civilization to its knees in this worst-case scenario is 95%!

Too high?

The 1% Challenge

Suppose every element used in the analysis has a 1% chance of failure.

Question :

How robust would South Africa be then?

Answer :

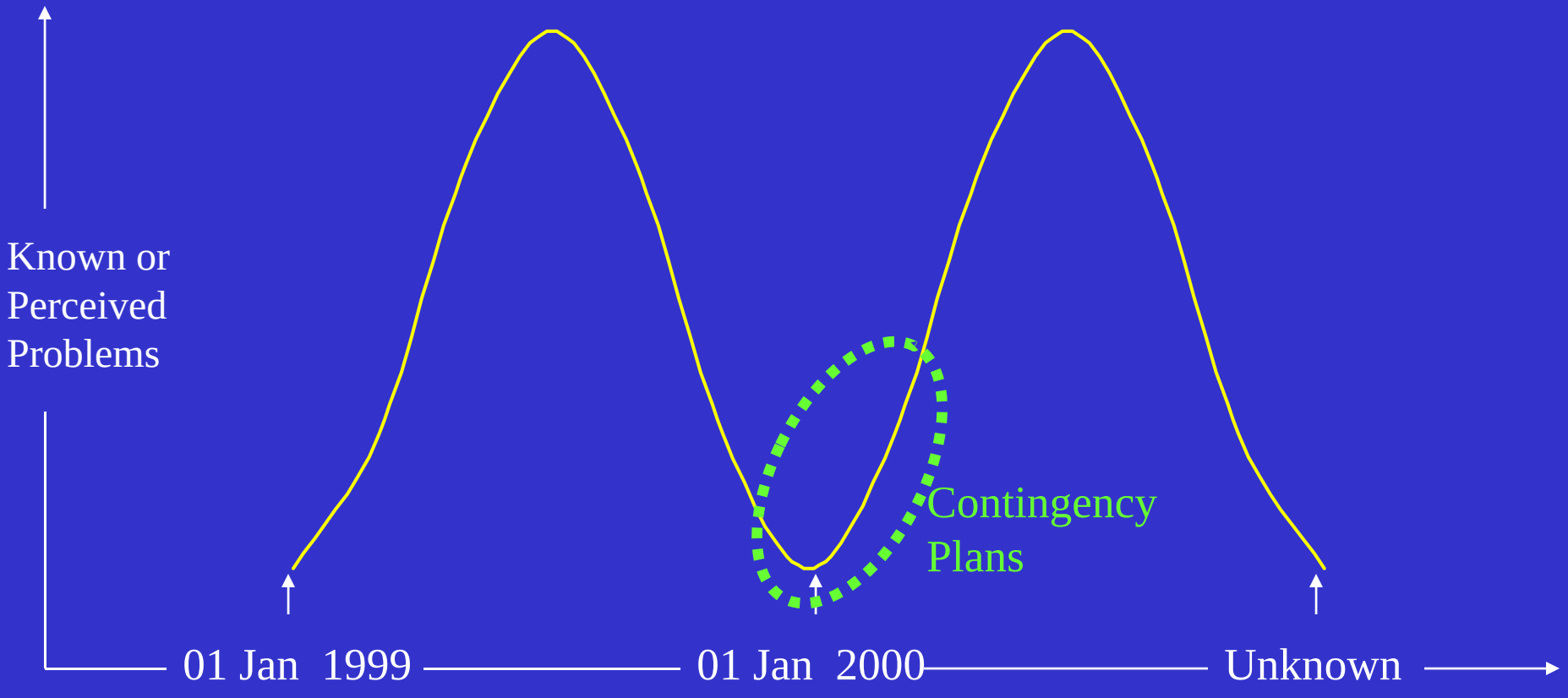
15.7% chance of complete collapse of modern civilization!

Conclusion

- The Y2K impact on the interdependencies of different sectors of our economy present a major challenge and has up to now been largely ignored.
- One weak link in a chain of our modern civilization can cause cascading disruptions that can bring our entire economy to collapse.
- These interdependencies can only be addressed by contingency plans.

National Y2K Contingency Plan

The Millennium ‘M Curve’



“ No matter how well you have assessed the risk of Y2K problems and addressed them, you need to have a Y2K Contingency Plan…….”

US Federal Emergency Management Agency

Contingency and Consequence Management Planning - Feb.1999

“ ……that way you will be prepared for what might happen if Y2K-related problems actually occur despite efforts to avoid or prevent them.”

US Federal Emergency Management Agency

Contingency and Consequence Management Planning - Feb.1999

$600bn.

Some Acronyms

- NYDSC National Y2K Decision Support Centre
- DMD Disaster Management Directorate
- CORIMT Contingency and Risk Management Team
- IDMC Inter-departmental Disaster Management Committee
- IMC Inter-Ministerial Committee for Disaster Management
- NYTT National Y2K Task Team
- PYTT Provincial Y2K Task Team
- M2K Public/Private sector initiative addressing local authority compliance
- NOCOC National Operational Co-ordinating Committee

CORIMT Project Goal

To ensure that adequate contingency plans are in place to minimise the risk to key infrastructural services during the cross-over to Year 2000.

Project Objectives

To identify areas of significant risk to the workings and economy of the country.

To develop integrated contingency plans for those areas of risk.

To ensure that the contingency plans are in place, tested and operable.

Key Players

- Eskom
- DWA&F (Water Task Team)
- Health (Health Task Team)
- Telkom
- Dept. of Transport (Transport Task Team)
- Transnet
- ATNS
- Inter-departmental Disaster Management Committee

Approach

- Collect information on area risks
- Identify interdependency between areas
- Develop and agree contingency responses.
- Identify areas where external resources may be required.

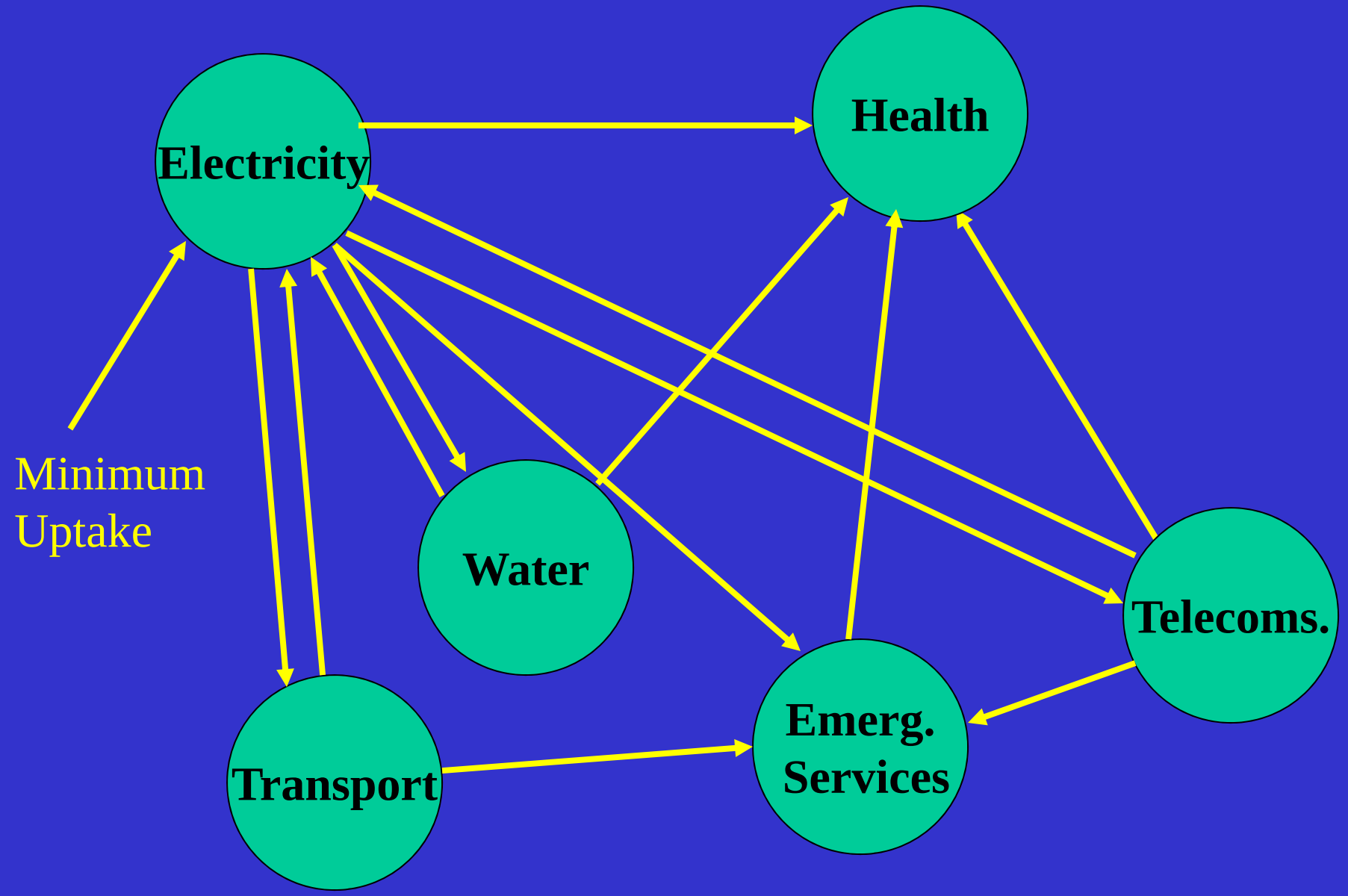
Approach

- Organise an assign additional resources as required
- Ensure plans meet their objectives
- Test contingency plans for effectiveness and workability
- Establish infrastructure

Identified areas of significant risk

- Communications
- Electricity
- Emergency Services
- Health Services
- Transportation
- Water and Waste Disposal

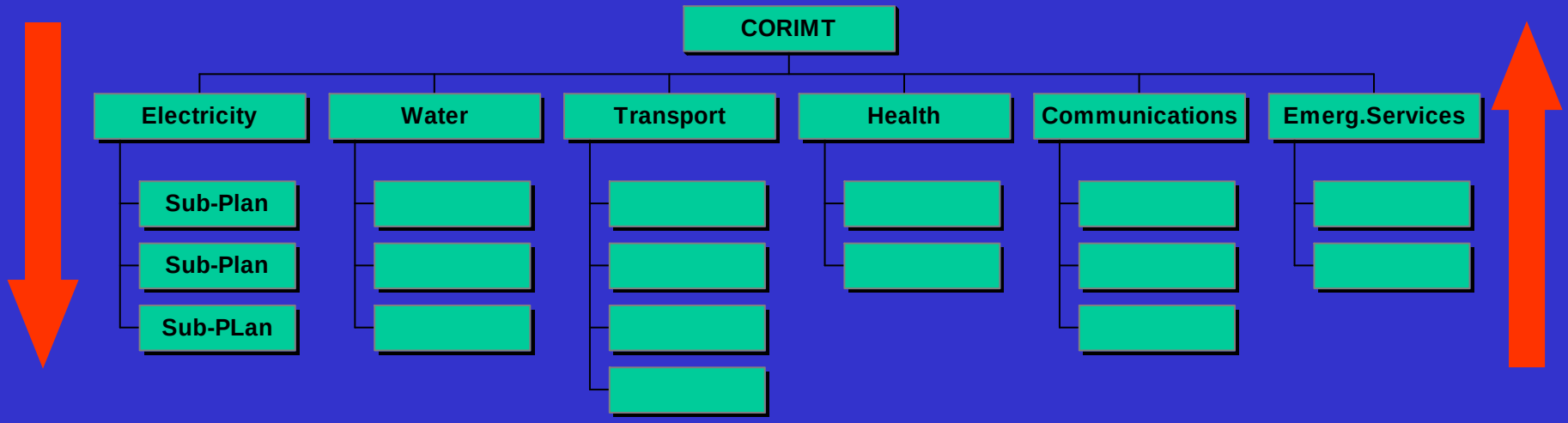
Critical Dependencies



CORIMT

Risks and Consequences

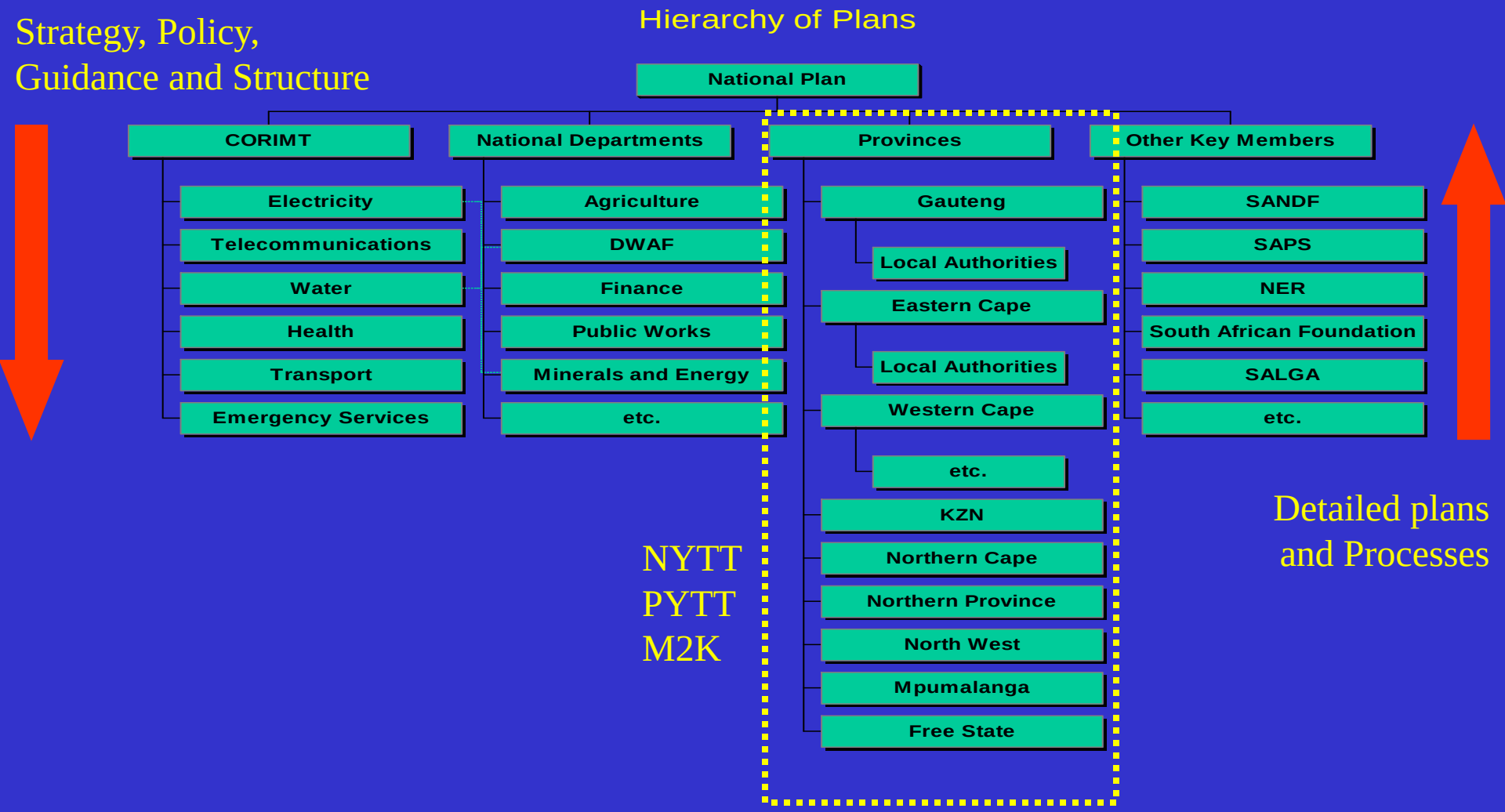
Hierarchy of Plans



Detailed plans and Processes

Inter-departmental Disaster Management Committee (IDMC)

Strategy, Policy, Guidance and Structure



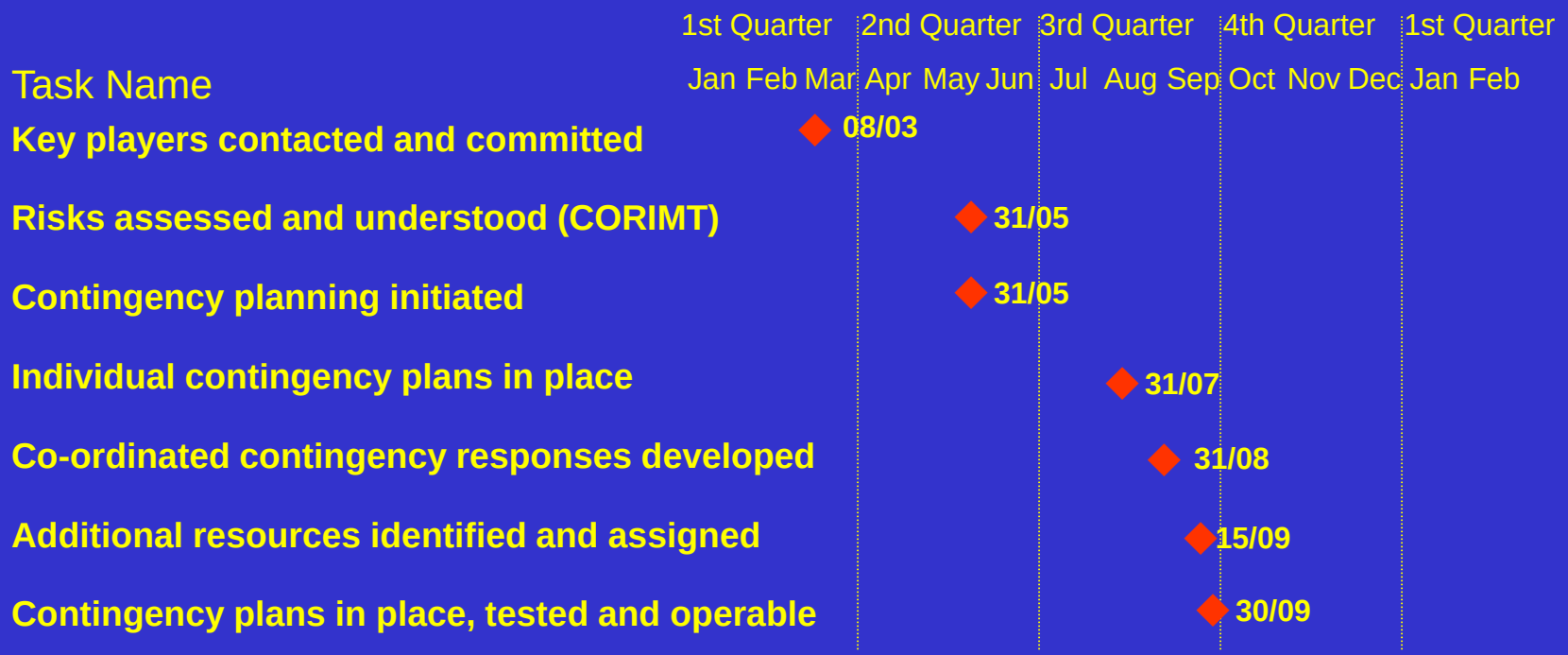
Plans will include (as a minimum):

- Identification of key risk areas.
- Criteria for initiation.
- Designated roles and responsibilities.
- Detailed procedures (who is to do what and by when).
- Resources required (people, materials, supplies, equipment).
- Provision for testing.

Integration will :

- Enable inter-area communications.
- Provide management of the dependencies between individual plans.
- Enable co-ordination of the plans as a whole.
- Give an overall picture.
- “Fill the cracks”.

Key Milestones



Critical Dependencies

Electricity

Contingency plans in place at operational and national levels.

Dependent upon:

- Coal stocks - Stocks high, dependent in long term upon transport sector
  (Risk: Extremely Low)
- Water - Stored water, dependent in longer term upon water sector
  (Risk: Very Low)
- Uptake of power - Requires minimum uptake of 7gw.
  (Risk: Medium)

Critical Dependencies

Electricity

Contingency plans in place at operational and national levels.

Dependent upon:

- Telecoms - Independent telecommunications system
  (Risk: Extremely Low)

Critical Dependencies

Telecoms

Contingency plans in place by end August 1999

Dependent upon:

- Electricity *(Risk: Very Low)*
  - Standby generators at critical sites to power telecomms equipment and air-conditioning plants
  - Fuel stocks at each site.
  - Strategic reserve of mobile generators and fuel bowsers for deployment as required
  - Dependent in longer term upon electricity sector

Critical Dependencies

Health

Generic contingency plans in place, each of 900+ hospital plans to be in place by end September 1999

Dependent upon:

- Electricity *(Risk: Very Low)* - Standby generators and fuel stocks at critical sites, dependent in long term upon electricity sector
- Water *(Risk: Low)* - Stored water at all sites, dependent in long term upon water sector

Critical Dependencies

Health

Generic contingency plans in place, each of 900+ hospital plans to be in place by end September 1999

Dependent upon:

- Emerg.Services *(Risk: Very Low)*
  - Emergency communications
  - National and provincial coordinating centres liaising with local authorities and NOCOC

- Telecoms. *(Risk: Extremely Low)*
  - Emergency communications including radios, pagers, and direct lines at all hospitals, dependent in longer term upon telecoms. sector

Critical Dependencies

Transport

Contingency plans in place by end August 1999

Dependent upon:

- Electricity *(Risk: Low)*
  - Liquid fuels stock levels increased
  - Possible demand limitation
  - Emergency generators at critical petrol stations
  - Refinery maintenance schedules reviewed
  - Fuel stockpiles at retail outlets
  - Rail tanker cars pooled
  - Dependent upon electricity sector in longer term

Critical Dependencies

Water

Draft plans in place, regional plans to be in place by end August 1999

Dependent upon:

- Electricity *(Risk: Medium)*
  - Ten risk scenarios developed as a basis for regional contingency planning.
  - Reservoirs to be filled to maximum
  - Emergency communications
  - Standby generators for monitoring and control equipment
  - Dependent in medium and long term on the electricity sector

Critical Dependencies

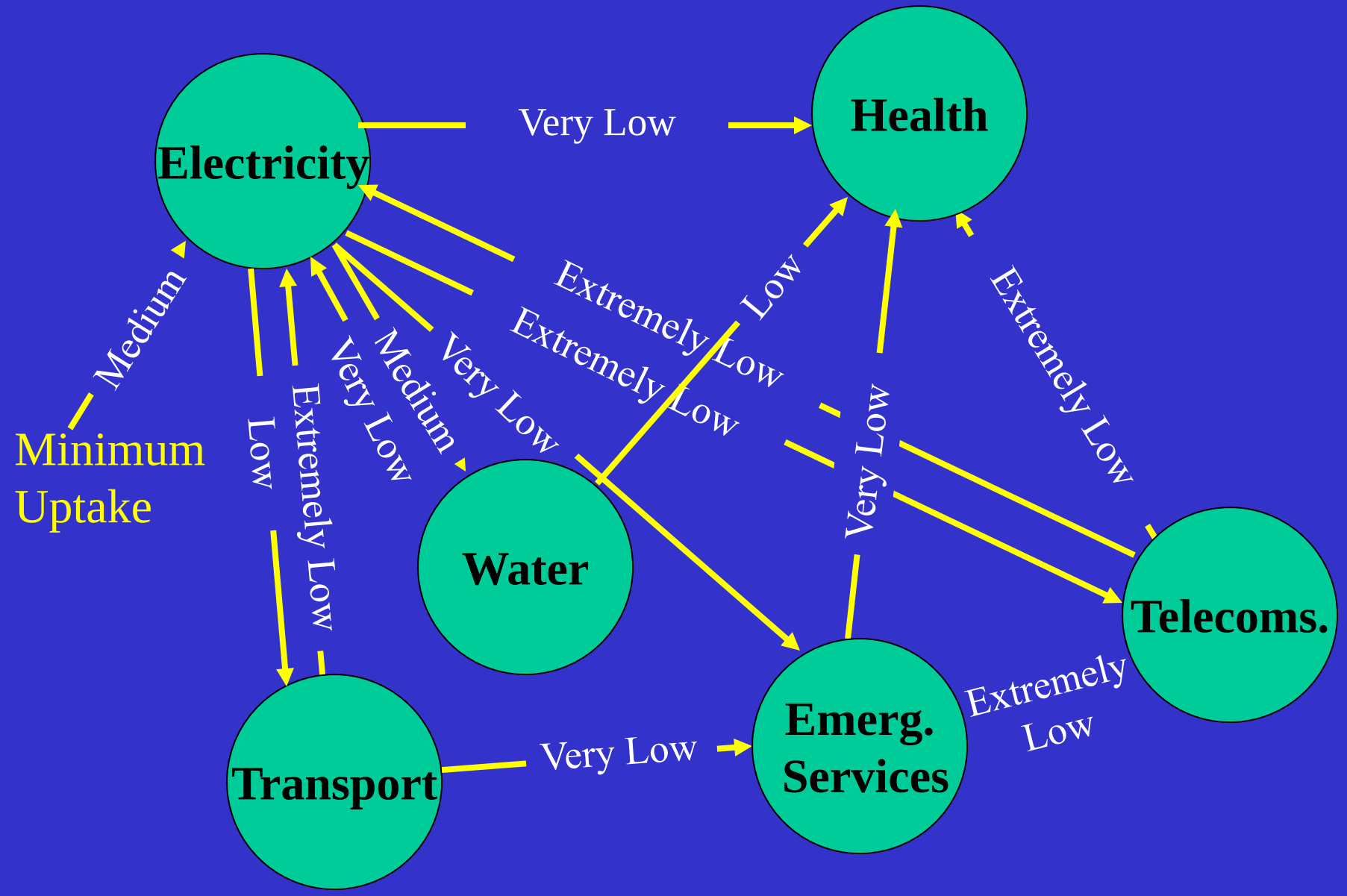
Emergency Services

Contingency plans and infrastructure in place

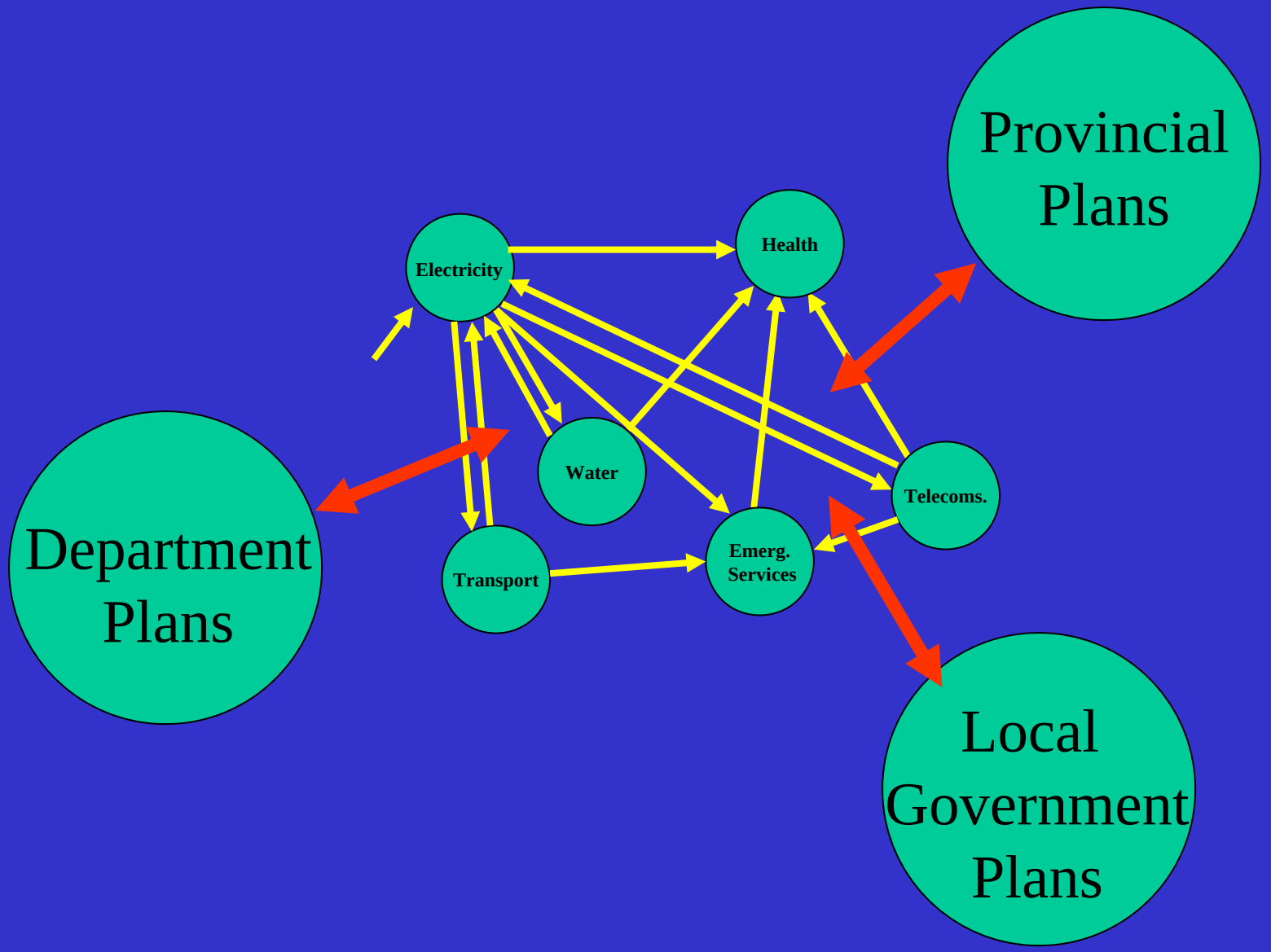
Dependent upon:

- Electricity *(Risk: Very Low)* - Standby generators at key sites, dependent upon electricity sector in the long term term.
- Transport *(Risk: Very Low)* - Fuel stocks, ultimately dependent on the transport sector.
- Telecoms. - Independent communications *(Risk: Extremely Low)* infrastructures

Critical Dependencies



National Contingency Planning



Delivery Structure

National Ops Rooms

STRATEGIC

NOCOC

Provincial Ops Rooms

OPERATIONAL

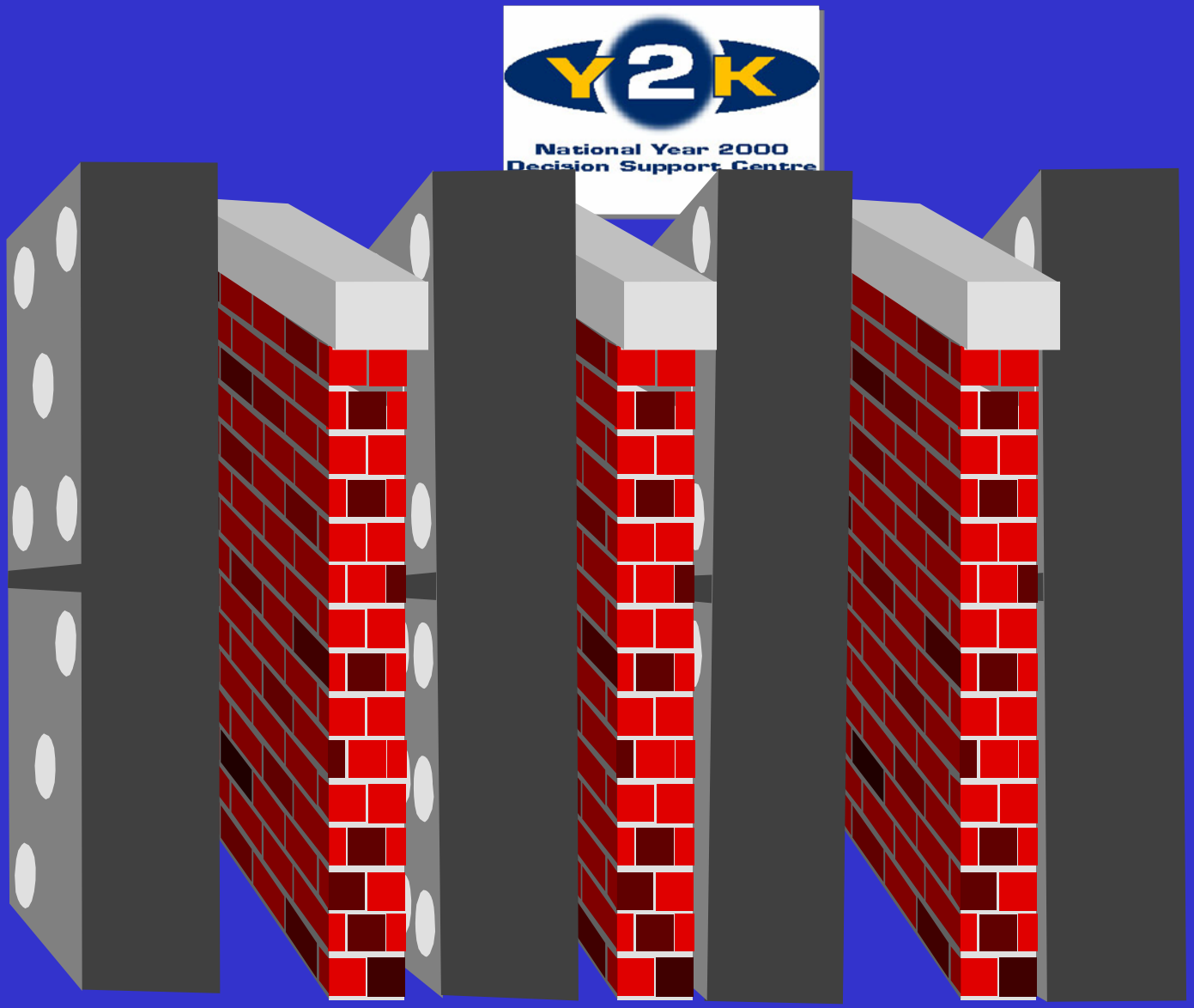
POCOC

AOCOC

Local Ops Rooms

TACTICAL

GOCOC


Y2K
National Year 2000
Decision Support Centre