See More.
Know More.
Always
Optimal.

FUJITSU

shaping tomorrow with you

Start at doomsday – and work backwards

How optimizing data greatly enhances Reverse Stress Testing to boost confidence, reassure regulators and stakeholders and ensure you're Always Optimal.

There can be many routes to 'doomsday' and the problem is, we don't know what they are before they happen. Nassim Nicholas Taleb, who popularized the concept of the Black Swan event, emphasizes a simple point: what you don't know is far more relevant than what you do know[1]. Our brains are wired to focus on facts – what's happened in the past – but we also need to be more creative in our pessimism and think outside the factual box. Which takes a large amount of processing power both in terms of our human brains and the computers we use to support our thinking.
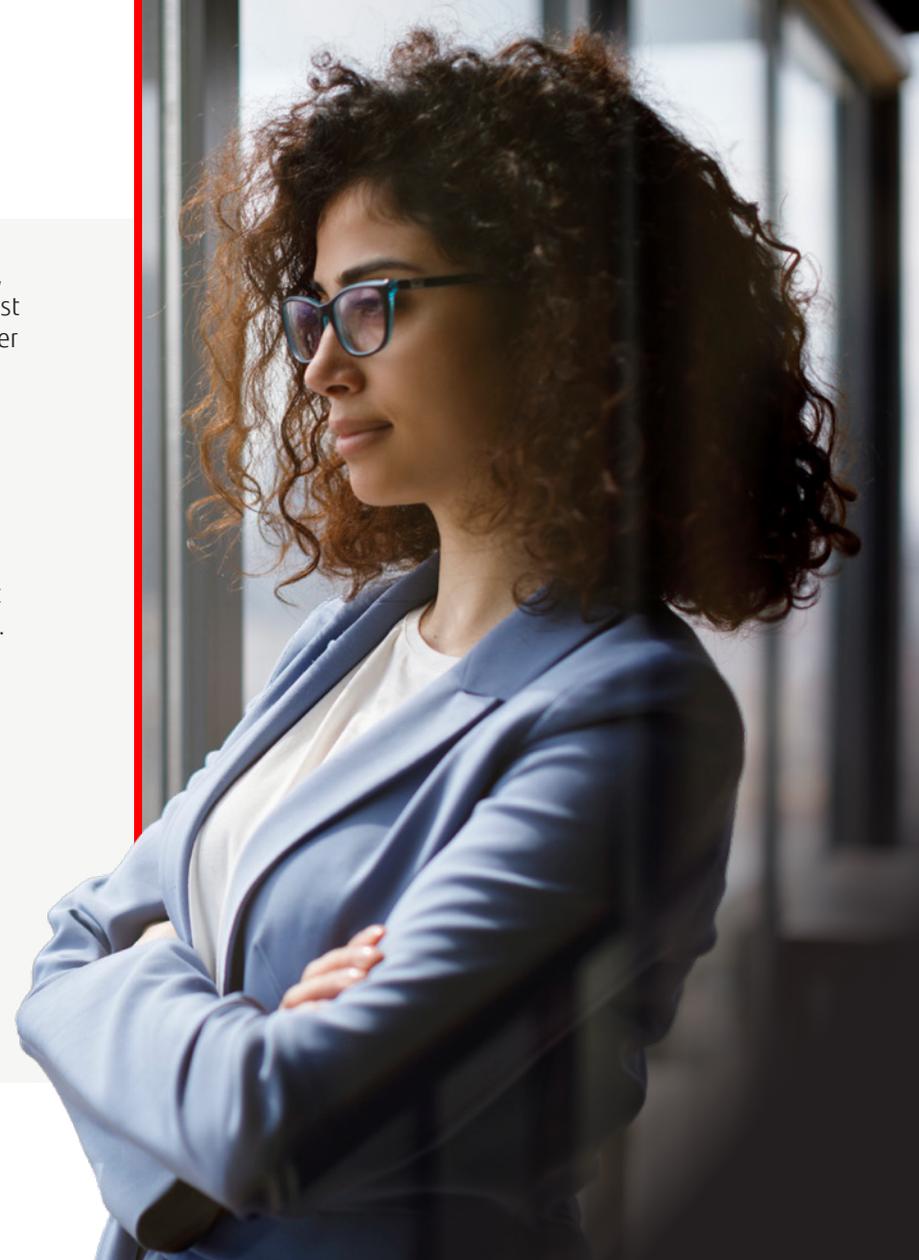
Traditional stress testing looks at possible shocks and how they might affect the institution. They are based on what the institution does today and might do tomorrow. Reverse Stress Testing (RST) assumes the institution's book of positions and capital has been wiped out and then models what could cause that.

By going in reverse, you reveal more possibilities, causes, and actions which could mitigate the worst outcomes. But that takes a lot of computing power since the number of possible combinations of single shock events increases exponentially with the number of events.

That's why it's important to optimize your stress testing methodologies to achieve a state we call, Always Optimal. It means cutting through the complexity associated with RST and turning what is a regulatory imperative into a business benefit. A way of identifying ways to strengthen your organization and reducing the complexity (and costs) associated with RST. And do it all faster, better, and more aligned to the real world. Being Always Optimal means seeing more, knowing more, and being more resilient.

That's why we start at doomsday and work backwards.

1. The Black Swan: The Impact of the Highly Probable by Nassim Nicholas Taleb

Being Always Optimal is critical in a rapidly changing Financial Services sector. Find out how our Quantum-Inspired Optimization Services get you there and get you ahead of the competition.

The better you model doomsday, the stronger you are today

This is where Fujitsu's pioneering Quantum-Inspired Optimization Services (QIOS) comes into the story. It offers the speed you need to solve complex combinatorial problems with greater agility.

The point of any kind of stress testing is to ask the right questions about what needs to be done today. By modelling the many possible causes of an institution's complete failure, or a serious loss of confidence in its integrity, you can reveal a wider range of risk factors that could prove fatal over the short- or longer-terms. So, by starting the process with the total failure of the enterprise you obtain a broader, more detailed picture of the threats you face – those you can see, and those that can come out of left field. You're able to map a series of events which, cumulatively, could lead to sudden failure.

QIOS enables you to run models at a fraction of the time it takes to do the same number of computations using traditional computing, which means that you get much closer to 'real world' detail as well as saving time (and costs associated with computing). Crucially, it means

you can carry out RST more often; it's no longer a chore which deflects from your valuable work. It's also a crucial factor in your agility, resilience, and insights. Simply, it adds to you're Always Optimal state.

The point is to be empowered to ask the right questions

There are many, many factors which could lead to market shocks big enough to bring down a bank or insurance company, especially the larger, more established ones. Modelling their collapse means looking at multiple causes of possible market shocks, how they would each impact the economy (local and global), how that would affect political decisions, market decisions, and the institution's ability to service and repay loans, what rate of defaults would occur, and how workouts, recoveries, and collections would play out.

QIOS can calculate the best fitting combination of many variables much faster than a classical computer. It means the institution's executives can not only prove that the stress testing has been rigorous (which pleases regulators) but also gain insights which enable them to ask and answer the key questions today. The point is to act now to avoid the doomsday scenario and operate confidently.

Quantum-inspired optimization is a game changer

Fujitsu's QIOS enables you to not only fulfil your compliance obligations around stress testing, but also exceed them. You achieve deeper, insights to help you make better decisions and mitigate risk.

It's all about combinatorial optimization at speed and at scale. That's the real promise of our QIOS; it offers an extra dimension to the processing of data to achieve pertinent and actionable insights from immense amounts of data. It enables you to crunch data that would take traditional computers days – in seconds. Quite simply, it's a game-changer.

Always Optimal, always agile, always resilient

Confidence, resilience, and agility are vital to any financial institution. Optimized RST enables you to act now to create not just a solid basis for current business, but a more agile organization for the challenges ahead.

Ensuring that your business is Always Optimal is critical in a rapidly changing financial sector. Contact us now to find out how we can help you achieve Always Optimal at **AskFujitsuHQ@ts.fujitsu.com**

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