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TOMORROW'S SOLUTIONS TODAY

PREPARING FOR BASEL IV

HOW A DYNAMIC RISK MANAGEMENT APPROACH PREPARES BANKS BETTER FOR THE FUTURE

BASEL IV

HOW A DYNAMIC RISK MANAGEMENT APPROACH PREPARES BANKS BETTER FOR THE FUTURE

Basel reporting has traditionally been a reporting cycle with somewhat fixed reporting intervals (monthly, quarterly, etc), typically run by the compliance department of the banks. The risk department's involvement is often limited to simply providing input and signing off on the actual reported numbers which means Basel reporting is often regarded as a compliance process. However, due to differences in overall responsibilities and operational requirements a compliance process is often governed differently to internal risk management reporting processes.

Arguably, compliance processes are often seen as a 'regulatory burden' and the associated costs as unwanted overhead. In this context, upgrades on production processes are understandably only planned on a need to have basis. In many cases, heavy customization at the implementation stage or after go-live has made banks reluctant to upgrade as they are perceived as an unnecessary and costly risk. One could argue that customized code works smoothly for a short time (at best!) but is bound to cause versioning conflicts at some point, especially during or after upgrades. It is this exact reasoning why upgrading heavily customized processes is considered to be needlessly treacherous.

One of the very few drivers that make upgrades absolutely necessary are regulatory changes. With Basel, those have taken the form of bundled revisions in response to various economic and financial crises.

In a first phase, the regulatory response to the 2008 global financial crisis and resulting banking crash has taken the form of bolt-on changes to the Basel minimum requirements regime , rather than fundamentally overhauling the existing rules. This has led most institutions to maintain their original Basel II solution, and bolt-on 'improvements' to this solution, as the core of it was not fundamentally changed.

> The Basel IV revision now offers a renewed opportunity to re-align the Basel process with the bank's risk management practices as the expectation is that things won't go back to a stable reporting cycle.

The finalized Basel III (Basel IV) rules are the long-awaited second-phase revisions of the existing regulation that originated in the 2008 financial crisis. This package is a fundamental overhaul that touches all aspects of the framework. Institutions should therefore realize this is better not done with a quick upgrade of the existing platform 'to jump the regulatory hurdle' but rather look for a future-ready platform to cover Basel IV built for stress testing.

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RISK COMPLIANCE VS RISK MANAGEMENT

RISK COMPLIANCE	VS	RISK MANAGEMENT
Fixed interval	FREQUENCY	Ad hoc
Days	TIME FRAME	Hours
Weak (UI/UX)	INTERACTION	User empowered UI/UX
IT	OPERATOR	Risk user

Closer alignment between compliance and risk processes has been on the agenda for risk professionals for a long time. Over the past decade, this has resulted in a range of both regulatory and internal improvement initiatives to close the traditional gap between those two functions. Disruptive change is often triggered by a crisis, for example, the 2008 crisis triggered a two-phased revision of the whole Basel framework. The Covid 19 crisis is most definitely doing away with the general practice that regulatory risk is done in a BAU setting, while internal risk management is responsible for scenario analysis. The requirements for both processes are traditionally very different (see above diagram) but are now identical in nature.

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HOW PREPARED ARE YOU?

The more stable nature of the compliance process, in comparison to risk management, is a thing of the past. Going forward, any regulatory measure will need to support the same requirements as internal risk reporting. On demand reporting of your regulatory capital levels, liquidity position, leverage and P&L under a range of stressed scenarios is rapidly becoming the new norm, for both regulators and CROs. These renewed expectations should be part of any strategic technology and innovation initiative when considering the fast approaching Basel IV deadline.

Reporting Cycle

- What is your regulatory timeframe to submit reports?
- Can you easily increase the frequency of reporting your basel minimum requirements?

User Interaction

- Can your Basel users easily modify the configurations of the system and run their own what-if scenario, simulation or stress tests?
- Can the user operate your Basel solution without the intervention of IT?

Upgrade frequency

- Do you consider your Basel solution as heavily customized or mostly out of the box?
- When planning to upgrade your Basel solution:
  - Do you plan in days, weeks or months?
  - Do you need assistance from your Basel solution vendor?

Reporting SOP

- How many hours does your Basel process take to complete?
- Is your Basel solution used for internal management reporting?

Simulations

- Does your Basel solution have a built-in simulation framework allowing users to independently run any simulation in the production environment?

Scenario Based

- Is stress testing conducted using your Basel solution, or rather done on an aggregate level using approximation?

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TECHNOLOGY FOR IMPROVED FUTURE RISK MANAGEMENT

The below diagram maps out how new technologies can support the new Basel IV requirements with specific examples.

	Basel IV Reporting Requirements	IT Implications	Technology Considerations
Data	Granular data reporting	Larger volumes of data = bigger and more flexible data storage Increased processing power while remaining cost-effective	• Easily & linearly scalable solution • Database and OS agnostic solutions • Hot/warm/cold data retention policy
Data	Data quality and consistency across returns	Improve data management practices Poor data quality may lead to incorrect returns = sanctions to the bank	• Measurable data quality • Transparent integration process
Data	Increased complexity of rules	Move away from manual to automated process Sourcing granular data properties from multiple source systems	• Flexible and permissive regulatory engines (easy to deploy and upgrade) • Intuitive user interface
Infrastructure	Frequent, incremental regulatory changes	Easy upgrade with no impact on other business processes Straight-forward, flexible upgrade path to quickly apply new regulatory changes	• Loosely coupled Microservices • Containerisation • Continuous integration to enable a flexible release process
Infrastructure	Increased calculation demands	Increased processing bandwidth capable of running multiple calculations simultaneously Run stand-alone simulations with no impact to regulatory submissions Cost-effective scalable applications	• Easily & linearly scalable solution • Fast streaming technology • Maximize resource usage through parallel processing

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STRESS TESTING

Define

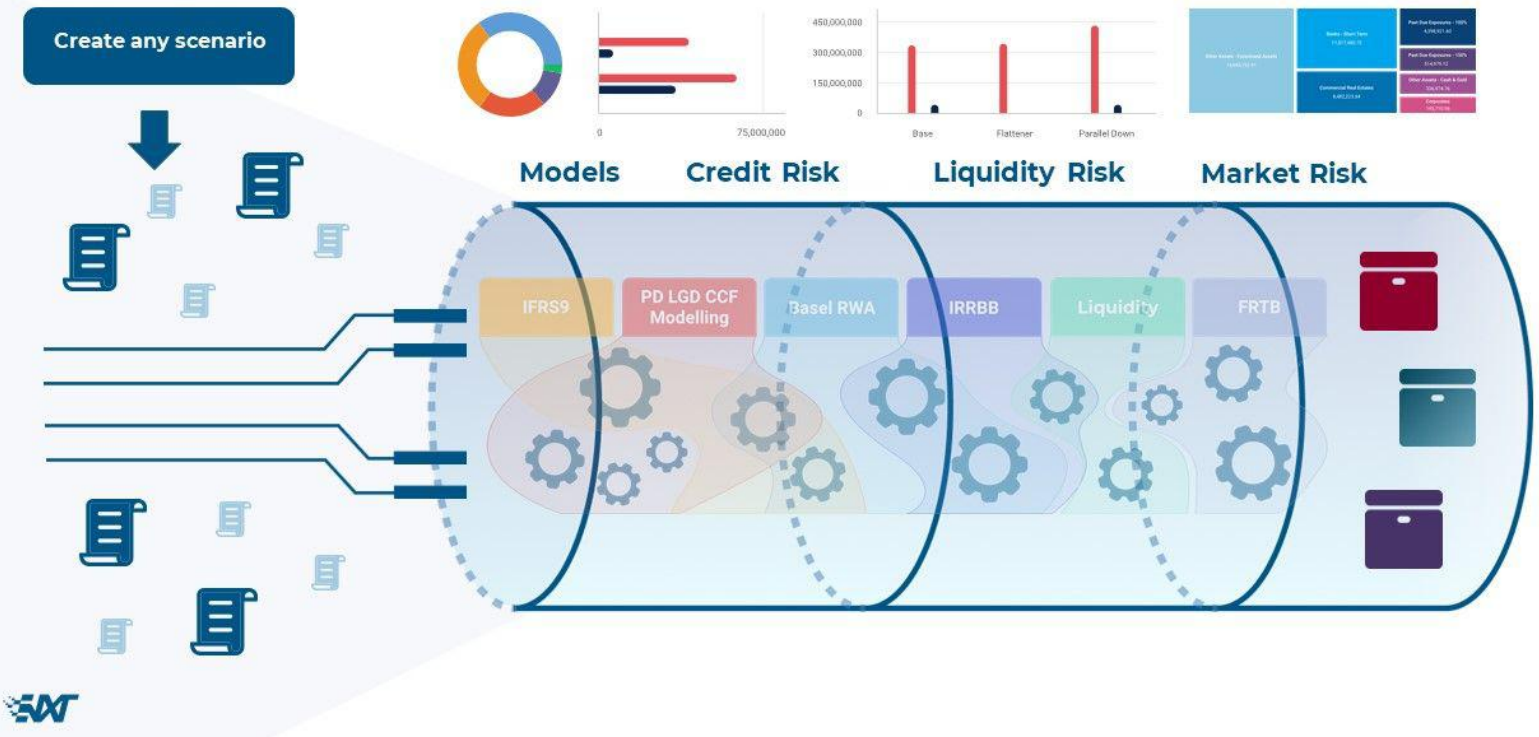
One central place to define your scenarios

- Uncertain times require a great degree of flexibility
- Scenarios need to be far more refined than before
- Behaviors and assumptions to be set at individual sectors, counterparties, sub-portfolios, positions
- Bottom-up approaches become a necessity
- New technology enables bottom-up approaches
- Top-down approaches were a necessity only due to processing time and/or cost considerations

Manage

Manage your scenarios independently

- Use your regulatory data as the basis for stress testing
- Apply any type of behavior on top of the base data for each economic scenario
- All behaviors can be defined on all input data, e.g.
  - policies (e.g. relief measures, regulations impacting banks)
  - market behaviors (interest rates, ccy rates, credit spreads,....)
  - customer behaviors (defaults, drawdowns,...)
- Re-use scenarios across different risk types



Process

Streaming technology and scalability

- Processing speed is key to run ad-hoc bottom-up scenarios
- Turn a manual process into a systemized & repeatable process
- Concurrently process multiple scenarios across multiple risk types

Analyze

Analyze the cross impacts of scenarios

- Across risk types
  For example, a rating downgrade of one bond position might impact:
  - ECL through stage transference
  - RWA through risk weighting
  - Liquidity through LCR/NSFR classification (e.g. from HQLA L1 to L2A)
  - Interest Rate risk through credit spread impacting cash flows and discounting
- Take interdependencies into account

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AUTOMATING CREDIT RISK REPORTING

CUSTOMER CASE STUDY

THE CHALLENGE

A large retail bank was looking at automating their Regulatory Credit Risk Reporting requirements.

THE SOLUTION

The Bank has been using the ElysianNxt IFRS 9 platform which already hosts their internal models for PD, LGD and EAD models. This provided an ideal starting point for credit risk regulatory reporting.

THE OUTCOME

Following the success of the IFRS 9 project, the bank decided to extend the use of the platform further and have implemented Basel III and Basel IV, respectively.

The Bank now has all its credit risk data centralized into the ElysianNxt platform. The universe of data, combined with the platform's performance and user-friendly interface enables the bank to strive for the optimum end-state; a fully integrated stress testing framework.

THE JOURNEY

2017

2020 go-live date for IFRS 9

- The regulator decided to take lessons learnt from other countries in the region before enforcing the rules on their banking industry, thus delaying the adoption date of IFRS 9 to 2020 with a 6 month parallel run starting July 2019.

2018

Industry trends: The selection process

- The Bank witnessed how other large financial institutions in the world struggled with IFRS 9, specifically on performance, as most solutions in the market were ill-equipped to handle IFRS 9's complex calculations for large volumes of data.
- The Bank then went looking for a high-speed, performant IFRS 9 solution that could accommodate their massive data volumes. They invited ElysianNxt, along with other large names in the industry, to participate in a proof of concept (POC) to prove the solution's capability to run 9 million contracts in less than 5 hours.
- **ElysianNxt's solution came out on top** – the solutions' streaming architecture and advanced technology met and exceeded the POC objectives.

2019

A successful implementation

- In the 6 months leading to the January go-live date, they ran at least 30 ECL calculations to fine-tune their models, methods and data.
- In June 2019, the bank went live with ElysianNxt's IFRS9.NXT – on budget and 6-months ahead of deadline.

2020

Boldly moving forward with a second phase

- The Bank's internal models for PD, LGD, and EAD were originally hosted outside of ElysianNxt. This caused processing delays as the former processes' calculation speed was too slow to meet EOM requirements. The former process also lacked a User Interface that would empower users to maintain or change models.
- The Bank decided to onboard their models into ElysianNxt, vastly improving control, transparency and performance.

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CUSTOMER CASE STUDY

Compliance Timelines

JANUARY 2023
BASEL 4 COMPLIANCE DEADLINE

MARCH 2021
BASEL IV GO LIVE

JANUARY 2021
BASEL III REPLACEMENT GO LIVE

JANUARY 2021
CREDIT RISK MODELS REPLACEMENT GO LIVE

JANUARY 2020
IFRS 9 COMPLIANCE DEADLINE

JUNE 2019
IFRS 9 GO LIVE

2021

Implementing Basel III and IV

- The Bank decided to extend the use of the platform further and green lit the implementation of Basel III in September 2020, replacing their current system. In only three months the bank successfully migrated to the ElysianNxt Basel solution.
- The Bank then decided to keep the momentum going and embarked on implementing Basel IV two years ahead of the regulatory deadlines. This made them one of the first banks globally to be live with Basel IV, and they did so in only **two months**.

THE JOURNEY CONTINUES...

A stress testing framework

- The Bank now has all its credit risk data centralized within the ElysianNxt platform.
- The universe of data, combined with the platform's performance and easy-to-use interface, enables the bank to strive for the optimum end-state; a fully integrated stress testing framework.
- Full bottom-up stress tests in minutes rather than hours.
- Centrally defined stress scenarios that can be attached to every calculation.

Potential stress testing scenario in the age of Covid:

1 | The head of risk reads the newspaper and gets alarmed by the news of a new Covid variant that could put the world economy back in a 6-month lockdown.

2 | They ask one of their risk analysts what the impact would be on the key risk metrics. The analysts logs into the ElysianNxt platform, defines the worst-case stress scenario, and runs it through all credit risk metrics.

3 | Before lunchtime, a detailed impact analysis across all the banks' key risk metrics can be presented.

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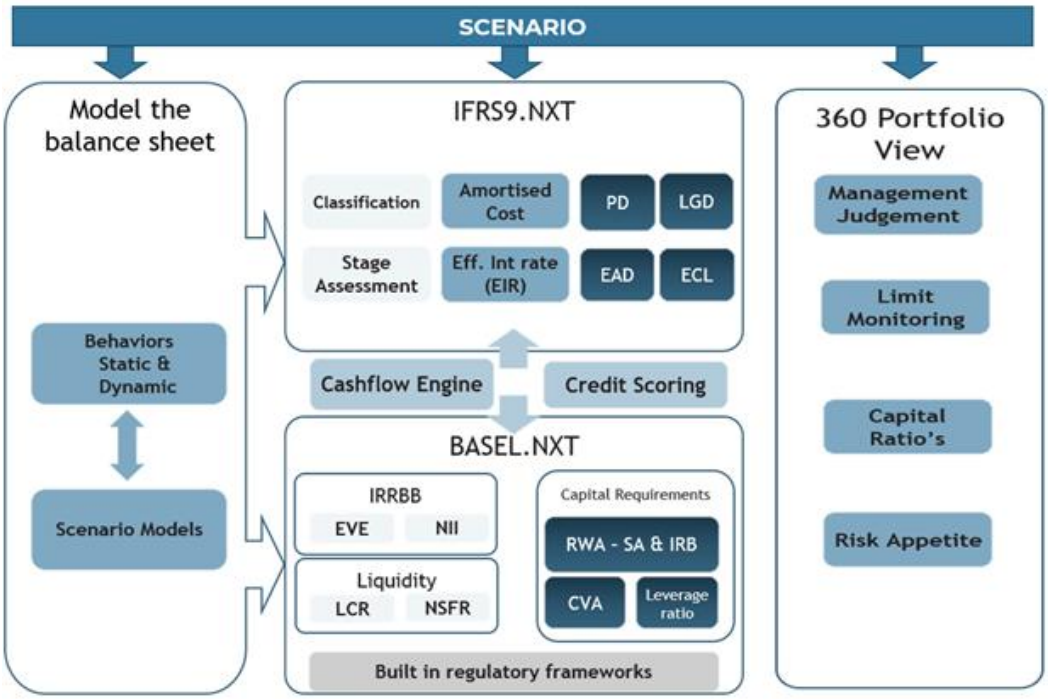
CUSTOMER CASE STUDY

The ElysianNxt stress testing framework offers the bank a complete 360° view on the results of the stress test. The integrated and purpose-built dashboards display the impact of the stress scenario on all risk metrics.



THE CONCLUSION

"The long-term approach needs to be risk management not just risk compliancy. Banks need to be able to run their IFRS 9 and Basel solutions ad hoc and intraday to assess the ever-changing impact of a wide range of scenarios."

Piet Mandeville
Product Director, Risk - ElysianNxt

PERFORMANCE RESULTS

8 Million — **Live Contracts** > 50 data sources

IRB Models

250+ Model Variables

34 **Internal Models** (PD, LGD, CCF)

< 2 Hours — To process all risk models

ECL

7 Months — **Implementation ECL**

30 Minutes — To run **scenarios**

60+ **Simulations** run since go live 2019

Basel

3 Months — **Basel 3** Implementation

2 Months — **Basel 4** Implementation

< 30 Minutes — Calculation runtime

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ABOUT ELSYIANNXT

WHO WE ARE

ElysianNxt is a fast-growing RegTech company focused on developing the most technologically advanced, user-friendly, real-time Risk and Finance solutions. Comprised by seasoned industry veterans and subject matter experts, the company was established to provide an alternative solution to the traditional, outdated, monolithic applications that the financial industry is accustomed to in their quest to automate their back-end financial calculation obligations.

WHAT MAKES US DIFFERENT

HIGH-SPEED PERFORMANCE
State-of-the-art data streaming technology allows for market leading calculations times and on-the-fly simulations

COST EFFECTIVE
Quick implementation on a flexible, scalable, database and OS agnostic platform with short upgrade cycles

FUTURE-PROOF
Most advanced BASEL and IFRS 9 solutions in the market utilizing the latest technology in data and architecture

Our lightning-fast calculation engine enables financial firms to react quickly to changes by performing real-time stress testing and running multiple simulations on the fly to see the immediate impact in minutes. The user-friendly system interface design provides useful information from the portfolio level, which can be drilled down to the contract level and exported in various formats.

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