Reacfin
a Solid Partner

Offering state-of-the-art advanced consulting and tooling services for Risk & Portfolio Management

Reacfin

Know-How to Risk

Reacfin Financial Planner Tool

& other services for Private Bankers, Wealth Managers and Financial Planners

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Reacfin's Businesses

Leveraging on our unique combination of academic expertise and experienced practitioners, Reacfin provides financial institutions with pragmatic solutions designed for real-life use while deploying state-of-the-art technical innovations.

Reacfin Tooling

Tool & Model development

Tailored computational solutions designed and developed to integrate smoothly into your company's systems and processes (incl. open-source offerings)

Reacfin Consulting

Advisory

Model deployments, calibration, documentation, testing, validation, maintenance, governance, regulatory compliance and life-cycle management

Reacfin Academy

Training

Both On-Site and On-Line Executive Education solutions including theoretical and methodological concepts, real-life case studies and exercises

Reacfin Financial Planner tools

Reacfin develops a wide range of solutions for Financial Planning including:

Online Free-Of-Charge tools

Register on **www.ReacfinFinancialPlanner.com** and discover for yourself, at no cost or commitment, our basic Financial Planning tool

Cost effective large scale solutions

Through a “pay-per-client” offering, we propose flexible and cost-efficient online solutions whatever the size of your client-base is and will be

High-end tailored solutions

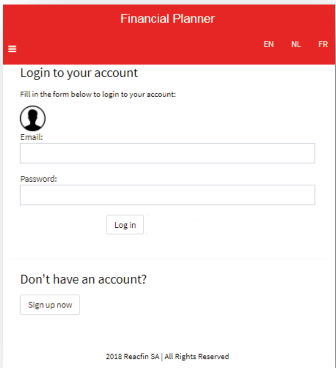
Combining our existing tools with our large library of algorithms and our consulting expertise, we propose bespoke online or local solutions tailored to the specificities of your firm’s client base and strategy

We elaborate on these different possibilities in the following pages.

Reacfin's Online Financial Planner

The standard version of Reacfin Online Financial Planner is accessible **Free-Of-Charge** to all authorized[1] Financial Planners, Private Banker or Portfolio & Wealth Managers.

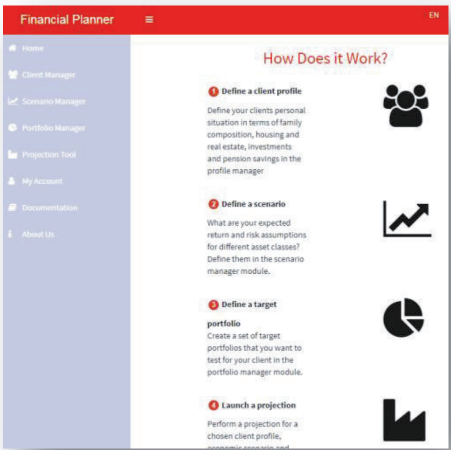
Feel free to request your password on: www.ReacfinFinancialPlanner.com



We only require an email, a password and some basic information to confirm that you are an authorized professional (or that you work for an authorized firm). All in all, it should take less than 5 minutes.

As of then you will have access to all functionalities of the standard tool by simply entering your email and password.

Our tool is designed to be usable on pretty much any platform (Desktop computers, Laptops, Tablets, etc.)



Once logged-in you will work with a very intuitive and user-friendly interface allowing you to define:

- Your client's profile,
- Relevant Market Scenarios
- Your client's current portfolio

While our free-of-charge tool will only allow you to create 2 client profiles, you can easily order credits online to be allowed to create additional profiles. The number of possible client profiles is virtually unlimited.

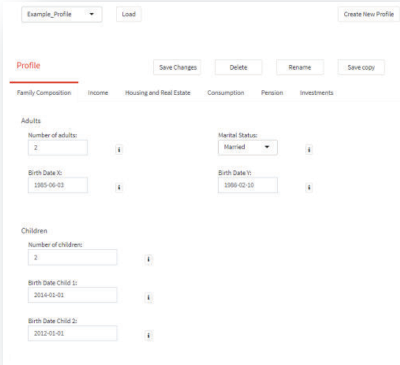
[1] Access to our tools is not granted to private individuals or parties who will not operate under a formal authorization from the National Financial Market Authority.

Defining client profiles

Our tool's **Client Manager** Page enables you to define the specificities of your client with a high level of granularity.

Based on this input, your portfolio projections will account for:

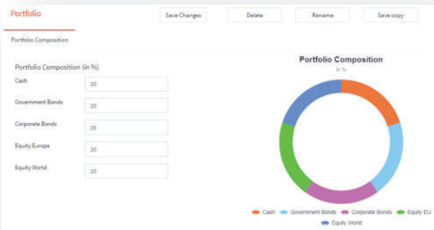
- Household composition, ages, marital status, etc.
- Household income considering your client's specific status & tax treatment *(employed, self-employed,…)*
- Housing & real estate assets (Primary residence & other properties whether for rental or leisure purposes)
- Targeted consumption spending
- Mortgage Loans
- Pension savings *(under Pillar I, II & III)*
- Participations in illiquid family business,
- etc.



All of this will only take a few minutes and will be saved at the click of a button. Set-it up once and for subsequent uses all you will need to do is to upload the recorded client profile and adapt it for any changes.

Note that one of the unique features of Reacfin's tool is that we can easily **account for local specificities**. The "Belgian Edition" of Reacfin Financial Planner will for instance integrate the relevant local tax rates and withholding taxes prevailing in the different Belgian cities and villages.

Portfolio Manager and Market Scenarios



As our tool works with aggregated asset classes, defining the client's current portfolio composition will prove even more straightforward.

As with the client profile, just save it and you will be able to reuse or tailor it at any time in the future.

Likewise, a few clicks will allow you to define the expected performance and risk of the various asset classes as well as their interdependencies. Or, if you prefer, just download predefined scenarios from our own library.

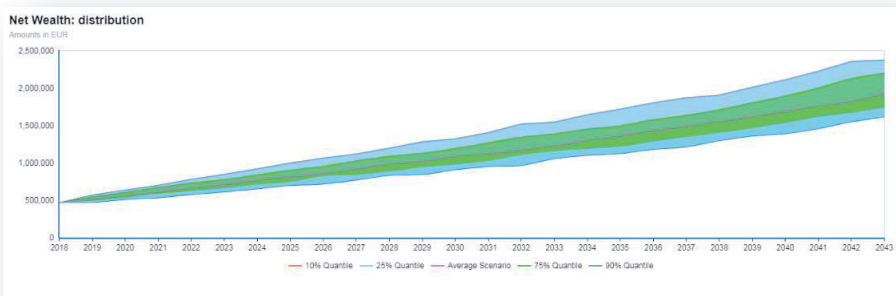
Projecting Portfolios

So far you have probably spent less than 15 minutes setting-up the tool to fully tailor it to your needs and you are ready to go. Just click on the menu Projection Tool.

In one click you simulate your client's situation for a large number of dimensions including:

- **Expected cash flows** (income, expenditure and savings)
- **Assets** (total assets, investment portfolios only, etc.)
- **Debts** (e.g. the amortization of the Mortgage Loans)
- **Net Wealth** (i.e. Assets net of debt)

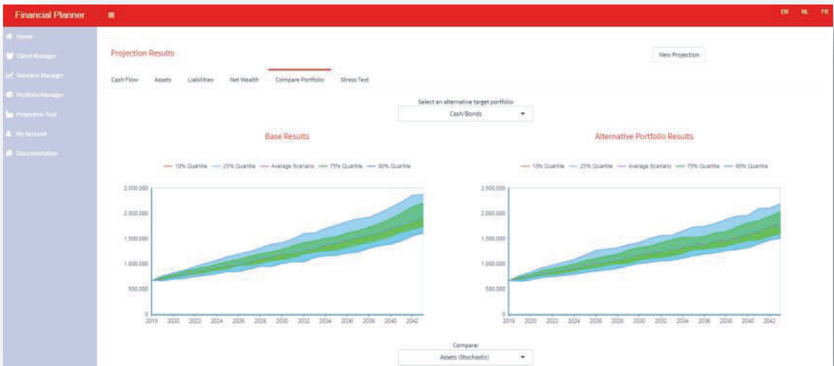
For the relevant dimensions you get the views both under average scenarios and as a stochastic distribution view to best visualise the risks.



All the results used to create the graphs or tables **can be downloaded in standard CSV format** so that you can easily reuse them in standard applications such as Microsoft Excel©. Only another single click is needed to automatically **generate a professional pdf report**.

Of course, one of the key reasons clients contact financial planners and wealth managers is to help them understand what the consequences will be if they opt for one or the other investment strategy.

To facilitate your work, our tool contains a comparison tool, which will allow you to run 2 portfolios simultaneously and display the results in parallel (both on average or in the form of stochastic distributions).



Stress testing

While our tool's stochastic simulations will give you a clear idea of what the theoretical distribution of performances will be, sound risk management and duty of care requires to also be able to simulate real-life distressed market conditions or deterministic adverse scenarios.

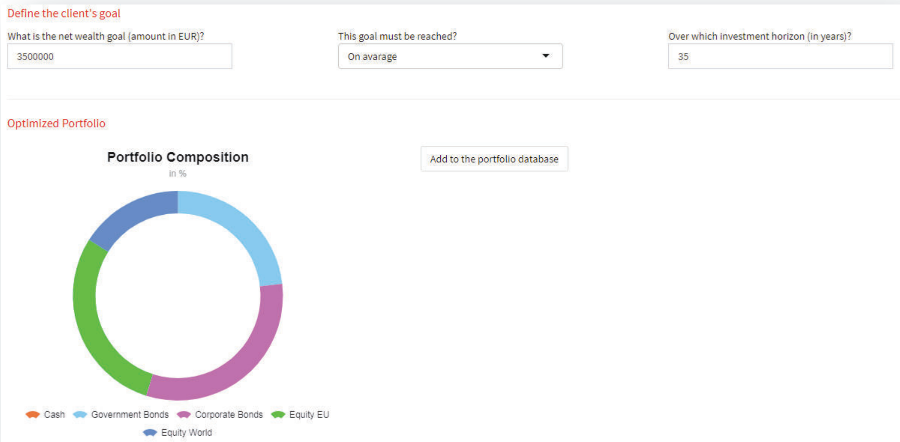
To that extent, we have added a full stress testing platform including pre-recorded historical scenarios such as the great depression on 1929, the Subprime crisis or the Japanese stagflation of the 1990's which you can re-simulate in Euros.

Optimizing portfolio diversification

Given you have defined assumptions with regard to market performances and asset classes interdependencies, you may also be interested for hints to optimize the benefits of diversification.

Related efficiency frontier analysis or more complex optimizations often proves a headache for many wealth management professionals. To solve this issue we propose a very intuitive approach whereby the tool will help you answer a typical client question:

> *"I want to have a net wealth of at least X within Y years. Under your market assumptions, how should I invest if I want my portfolio's expected performance to reach this goal while I minimize the investment risks?"*



The resulting portfolio can then be saved to be used for the fully detailed analysis (Income, Assets, Debt, Net Wealth, Stress Testing,...) detailed above.

Using the results

As indicated above all of our tools results (and inputs) can be exported at a click of a button under standard CSV format so that they can be reused by a large range of other applications.

Furthermore our tool is equipped with an automated report generator which will create a pdf file with all tables and charts.

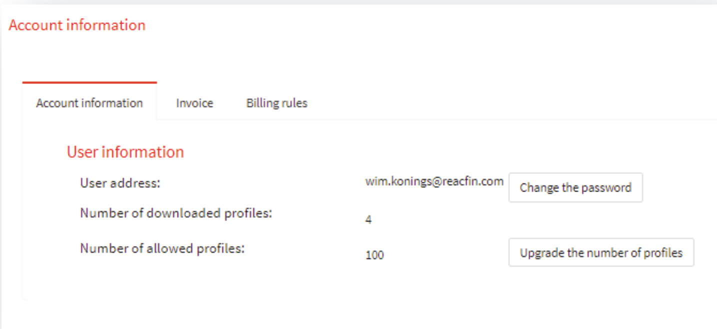
Scalable upon subscription

Discovering Reacfin's Online Financial Planner and using it is currently **free-of-charge**[2]. All you will have to provide is your login information. However, the free version limits you to **two investors profiles only**. Likewise, the number of market scenarios and the number of investment portfolio compositions you are able to store online may be limited as well.

This does not mean that you cannot serve a larger number of your clients with the free-of-charge version. It only means that whenever you will want to exceed 2 client profiles you will have to manually adapt the relevant settings, making it less user-friendly.

With a (very reasonably priced) paid subscription, we allow for the possibility **to scale-up the profiles** to a virtually unlimited number.

To propose the most **cost efficient and flexible** offering, we allow the **purchase of additional profiles online** (each including an additional market scenario and an additional possible portfolio composition), paying only for what you need (per month and per profile). Prices remain disproportionately low when the number of profiles purchased increases and profiles can be purchased either per individual account manager or as a company (to further benefit from economies of scale).



You will find detailed pricing information, invoicing standards and billing rules in the dedicated "Account Information" tab of the tool. Please note that we offer both individual and corporate wide subscriptions.

[2] Terms & conditions apply; see "Reacfin Online Financial Planner Terms of Use" available on www.ReacfinFinancialPlanner.com.

Tailored tools

You company may be interested in a bespoke solution. Reacfin proposes a large range of tailored solutions which we perform as standard fixed-budget consulting missions.

Typical **basic tailoring requests** that financial institutions request consist of:

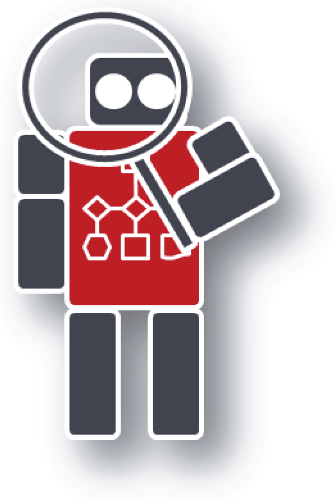
- **Interfacing** the Reacfin Financial Planner with your own systems and reporting
- Further **detailing the customer profiles** by leveraging on your existing data
- Providing **more granularity in the investment classes** (including your own investment products such as funds, MTNs, Unit-Linked insurances, etc.)
- Providing **scenarios calibration** services
- Offering “white labelled” solutions which we **rebrand under your company’s name and “Look & Feel”**

We also offer significantly more **advanced tailored features**.

- Improved stochastic simulation capabilities to **consider financial options, structured products or advanced (algorithmic) investment strategies**.
    - Our standard online tool uses basic yet market-standard total return simulations for its stochastic engines. This limits the relevance of the risk analysis to relatively standard asset classes and scenarios.
    - Some Financial Institutions request solutions able to also simulate cash-flows and optional features. This requires using more precise models for financial risk drivers such as interest rates, credit spreads, equity returns, dividend yields, etc.
    - To that extent, Reacfin has developed **Economic Scenario Generators** (“ESGs”) able to produce cross-asset class scenarios accounting for features such as mean reversions, jump diffusions, stochastic volatilities and complex risk driver interdependencies. You can test a simplified demo of our ESG solution on http://apps.reacfin.com/ESG/

    - The scenarios are then used to regenerate financial instrument prices and risk parameters and used as input towards sophisticated risk & performance monitoring tools and optimization engines.

- Advanced modelling of your client risk profiles (including non-linear risk aversion characteristics and investment preferences)
    - Reacfin Advisory is particularly advanced in the development of Machine Learning based solutions (a sub-field of Artificial Intelligence) and Data Science more generally.
    - Our clients use our services to help them:
        - Adequately categorise clients among **homogeneous groups of risk aversion** profiles
        - Assess **dynamic evolution of investment preferences** considering the evolution of markets and of product offerings
        - Quantify per client group, **the upside they are willing to give up in exchange for down-side protection**, etc.



Finally, your company may rather be looking for solutions which are "fully owned" by your own staff. In that context we may propose **"Open-Source" style offerings**[3] whereby we:

- install our tool on your **company servers**
- handover the **full code of our tools** to your company
- thoroughly **train your application development staff** to understand all lines of our codes and the methodologies we apply. As a result, your teams are able to further maintain and develop our tools without the support of Reacfin
- Grant you a licence which allows you to **use (including the installation of as many instances as you require), copy, modify and develop the tool according to your needs** as long as it remains within your company

Under such "Open-Source" style offering, Reacfin will only retain the rights to sell and distribute the tool to third parties and we will request that the code which we hand-over to your company be registered as "trading secret / confidential information" as well as non-disclosure agreements.

For more information on the scope of our tailored solutions and budgets, do not hesitate to contact us.

[3] Only proposed in cases where the expected usage of the tool handed-over is not expected to compete with Reacfin's business

Security, privacy & portability

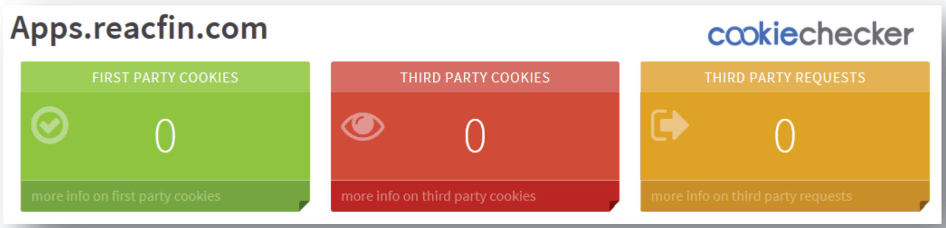
At Reacfin, we pay particular attention to your data privacy and system security.

While the servers on which our application runs is carefully secured against intrusion and data misappropriation, all the information which may be stored using our financial planner is carefully encrypted with high-end data protection algorithms. This way we ensure that even in the unlikely event that we would get hacked, none of your data stored on the servers could be used by third parties. In any case, nothing requires you to input identifiable client data: you choose the name or the codes under which you will identify the clients in our systems.

At any time you may request us to delete the data stored on your behalf from our servers and we do not sell or distribute your data to third parties.

The Reacfin Online Financial Planner is fundamentally a non-intrusive application:

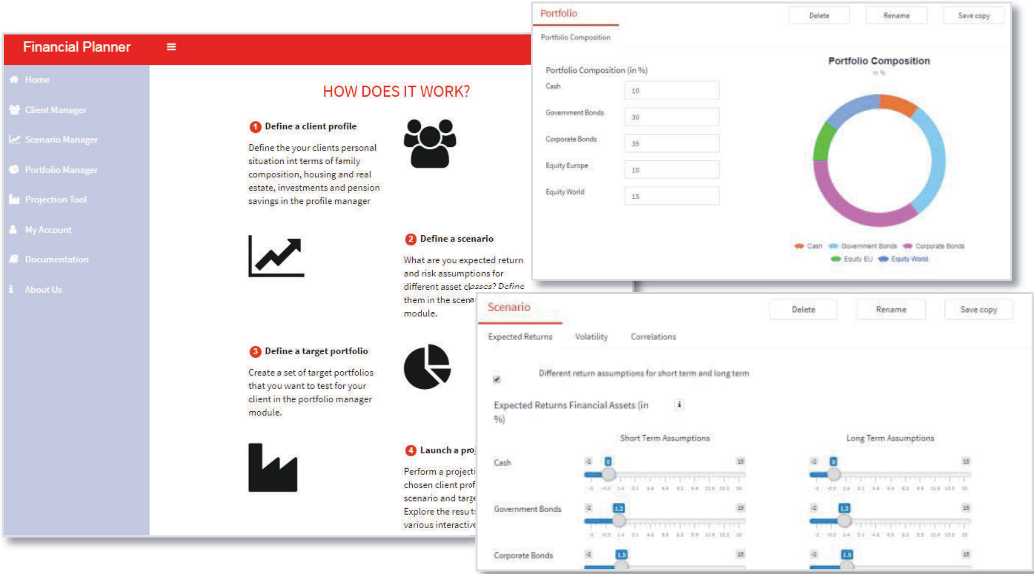
- There is no need to install any software or uncommon plug-ins
- All calculations are performed on our safely secured servers
- Download-able results are simple, safe and transparent .csv “flat files”
- We don’t make use of “cookies” which would install on your machine



Being developed using browser based technology, Reacfin’s Financial Planner tool proves particularly portable. You will be able to use the online version on any computer (PC, Mac’s, tablets, etc.) with a modern internet browser and a normal screen (due to the nature of the graphs produced, we don’t recommend using mobile phones, although technically it will work as well).

For best visualisation, we recommend using Firefox, Safari, Chrome or a recent version of Internet Explorer.

Try it for yourself !



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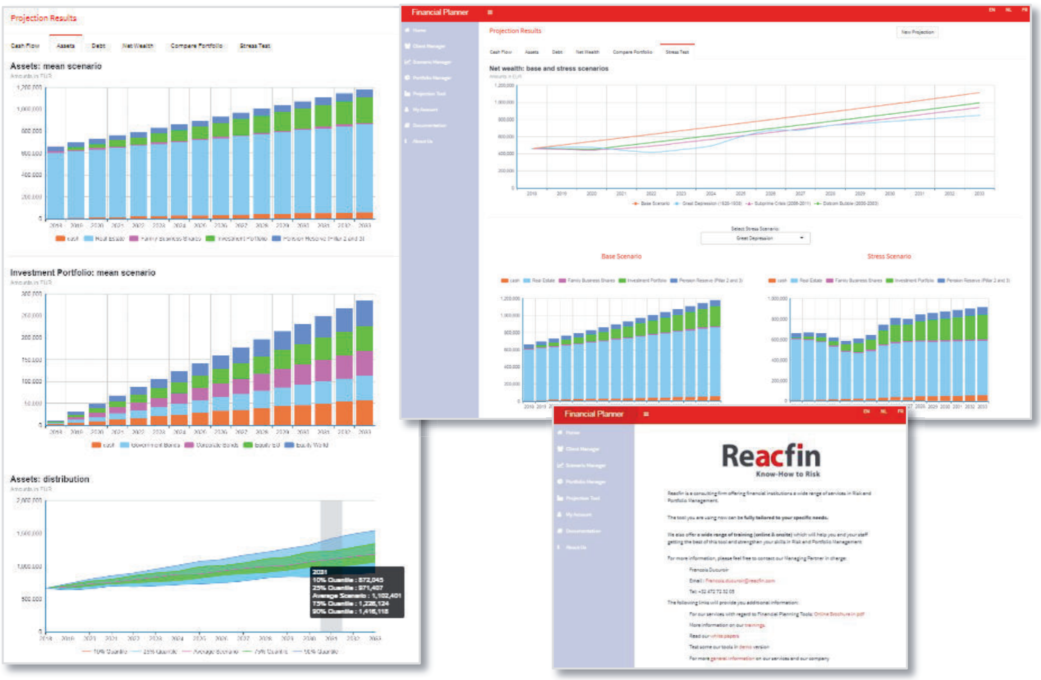

Simple and effective starting at no cost or commitment!

Training in Portfolio & Risk Management

While the Reacfin Financial Planner is particularly straightforward to use, the real challenge remains coping with the ever increasing pace of market innovations and of evolving Portfolio & Risk Management techniques.

In this respect, Reacfin Academy is our business line dedicated to **professional continuous education in Risk, Finance, Portfolio Management, Actuarial Science and Data Science for Financial Institutions**.

We offer a unique **mix of academic expertise & pedagogy with real-life experiences of practitioners**. Many of our staff combines their professional career with professorships in Finance, Risk & Portfolio Management or Actuarial Science in highly reputed universities.

Our **Online Services** include:

- Online dynamic presentations
- Online tests and certifications
- Interactive e-classrooms or webinars
- Download-able documentation
- Hands-on exercises (e.g. in Excel)
- Centralized Learning Management (LMS)

Our **Onsite Services** include:

- Traditional class room trainings at your premises
- Practical case studies and exercises with trainer support
- One-on-One executive training

Examples of trainings proposed for Asset Managers, Private Bankers or Financial Planners include:

- Hedging and risk mitigation techniques for portfolio managers
- Risk Management techniques for portfolio managers
- Using Stochastic simulation techniques and Economic Scenario Generators in portfolio management
- Machine Learning techniques for Financial Institutions

For more information please check our dedicated website:

ReacfinAcademy.com

Advisory services

Over the last 15 years, Reacfin's core business is and remains Consulting.

With an experienced team of about 25 consultants (most of whom have multiple university degrees), we have already successfully served over 200 European Financial institutions ranging from insurance companies, large wholesales banks, family owned private banks, asset management companies and financial market infrastructures.

Examples of recent assignments performed for private banks or asset and wealth managers include:

- Modelling of clients investment & savings preferences
- Strategic Asset Allocation for Banks & Insurance companies
- Development of structured products and derivatives pricers
- Deposits modelling (replicators and volumes elasticities)
- Risk and Financial performance dashboards for Private Banks
- Modelling and structuring sustainable investment strategies
- Structuring the pooling of private banking client assets to provide them with access to a larger range of financial instruments and reduce costs
- Development of Machine Learning applications for KYC & AML purposes

For more information about our consulting services don't hesitate to contact us:

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Company Profile

Reacfin is a consulting firm focused on setting up top quality, tailor-made Risk & Portfolio Management Frameworks for Financial Institutions. We provide advice and tools using state-of-the-art actuarial, quantitative financial techniques and management processes.

Developments in Portfolio & Risk Management are progressing at a rapid pace. Reacfin assigns highly skilled and experienced practitioners to develop advanced analytics and models. Our support, which is strongly rooted in the spirit of co-development, allows for an effective transfer of knowledge such that your firm will achieve sustainably improved performance and new competitive advantages.

Reacfin is a spin-off of the University of Louvain (which ranks 1st globally for Master degrees in Actuarial Sciences for the 3rd consecutive year according to EdUniversal). We maintain strong links with the academic world which allows us to stay current and guarantee the independence, robustness and appropriateness of the advice and services we offer.

Our Values

Excellence	Innovation	Integrity	Solution-Driven	Reliability
We attract the best people We develop their skills and career through diversified missions and rigorous knowledge management We go the extra-mile to deliver the best quality in our work & services	By acting as a bridge linking academic excellence with best market practices, we select the latest research that best serves our clients Through out of the box thinking, we apply state-of-the-art techniques that offer our clients pragmatic added-value solutions	We put work ethics, client's best interest and confidentiality as the foundation of our work We commit at promoting the greatest transparency and knowledge sharing in all our clients' solutions	We are dedicated at clearly understanding the needs of our clients We deliver solutions that produce measurable value Our deliverables are tailored and actionable solutions to our clients' challenges	We develop sustainable partnerships with our clients We never compromise on our commitments including level of quality, budgets & deadlines All our deliverables are designed, developed and tested to last over time with constant efficiency
our outstanding feature	our founding ambition	our every-day commitment	our primary focus	our deliverables characteristic

Reacfin's Centers of Excellence

Knowledge management, competence and innovation are the fundamental drivers of Reacfin. We have organized the company around 4 Centers of Excellence that help us continuously improve our expertise and enable us to master the latest developments in advanced analytical methods applicable to actuarial science, risk & portfolio management and data science.

Our Centers of Excellence have the following objectives:

- Contribute to the knowledge management activity of the company: follow-up of regulations, scientific papers, seminars and books
- Organize knowledge transfer inside the company: internal trainings, mentoring, knowledge libraries, tools & algorithms libraries, etc.
- Drive our R&D activities and promote innovation: coordinating and implementing R&D projects and publications
- Contribute to Reacfin Academy, our training service, by identifying market needs and support the definition of content in external teaching projects
- Manage exterior relations with practitioners, experts, universities, supervisors and professional associations
- Ensure that the quality of all projects and deliverables is consistent with the standards of Reacfin

Reacfin's 5 Centres of Excellence

Risk & Portfolio Management

ALM, Portfolio Management & Quantitative Finance

- Implementation/calibration of stochastic models
- Pricing of financial instruments
- Development of AM & ALM models
- Design/review/implementation of systematic trading & hedging strategies

Qualitative Risk Management, Restructuring & Operations

- Internal & regulatory reporting (KRI's & KPI's dashboards)
- Industrialization of processes, businesses restructuring & change management
- Validations, Model Review frameworks and model Documentation

Insurance specialties (actuarial science)

Life, Health and Pension

- Pricing , product development & reserving
- Dynamic Financial Analysis (DFA)
- Capital Requirement optimization
- Business valuation support
- Actuarial function report or outsourcing

Non-Life

- Implementation or review of reserving methodologies
- Development of innovative pricing methodologies and tools
- Valuation & profitability analysis models
- Risk mitigation optimisation

Data Science

- Machine learning models for risk & portfolio management, KYC & clients duty of care, fraud, pricing, reserving or legal & regulatory watch
- Text mining solutions and qualitative financial environment analysis
- Data preparation, data quality checks and data validation
- Data visualization (dynamic dashboards, automated reports,, etc.)
- Creation of structured dataset thanks to scraping methodologies

Our Partners

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Check our online resources on www.reacfin.com

Online Apps & Tools demo's

Latest research & programs of trainings

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Reacfin Tooling

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