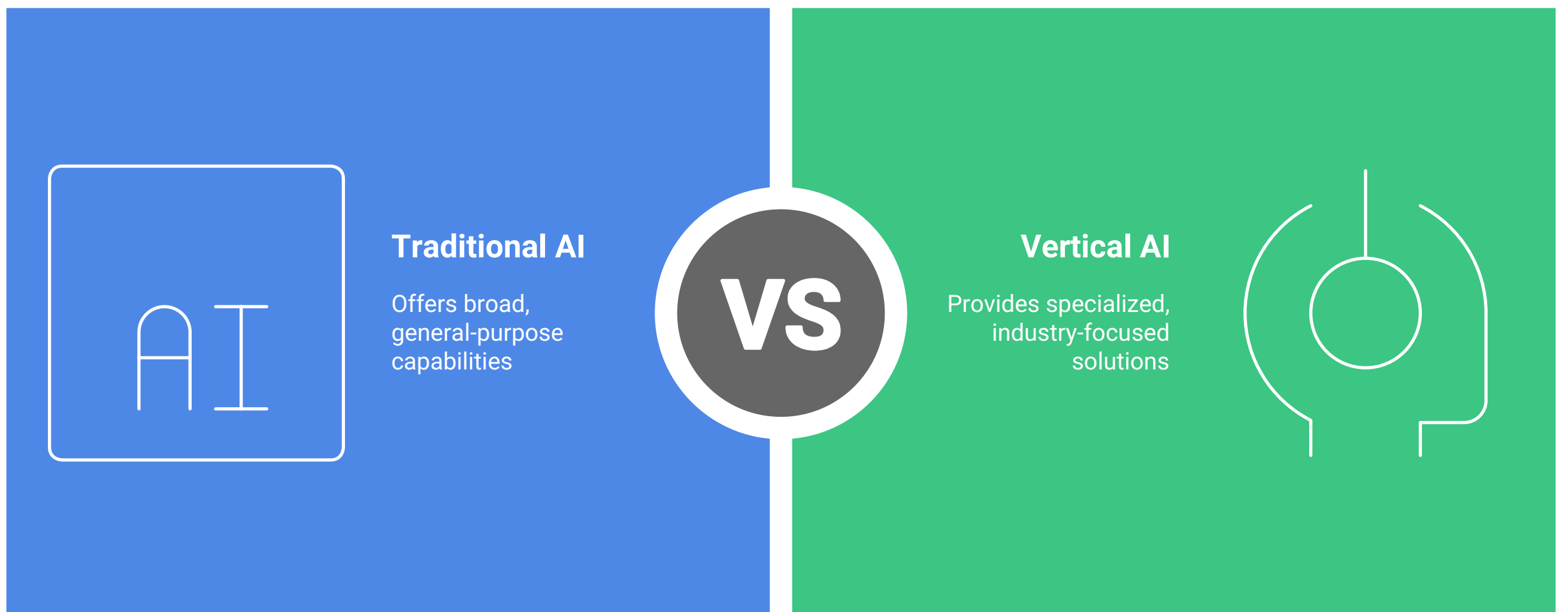




The word of the day is... (drum roll)...:Vertical AI

Artificial Intelligence (AI) is fundamentally reshaping the finance sector, and **Vertical AI** (“VAI”) could be the next step in agentic AI, delivering specialized solutions tailored to the unique demands of a specific field, for today: finance, banking, investment management, and capital markets. While traditional AI models provide broad, general-purpose capabilities, **VAI** focuses on solving specific, industry-driven challenges, providing a competitive edge in a sector that requires contextual precision, speed, and compliance.

Choose the best AI approach for finance sector innovation



While it is still considered as agentic, I suspect VAI will go even further with the use of **multi-agent collaboration**. This concept involves multiple AI systems or “agents,” each designed to perform specialized tasks, collaborating seamlessly to deliver specific outcomes within a given context. In finance, this collaboration allows for more nuanced decision-making, better risk management, and improved efficiency across various processes, from trading and portfolio management to customer service and regulatory compliance. I recall the “prehistoric” days when traders would call the back-office to check if a trade had been confirmed or settled... is that still a thing?

Let it be said upfront, this article is a glance into the very possible future, but AI will not replace people, people might be replaced by people using AI however.



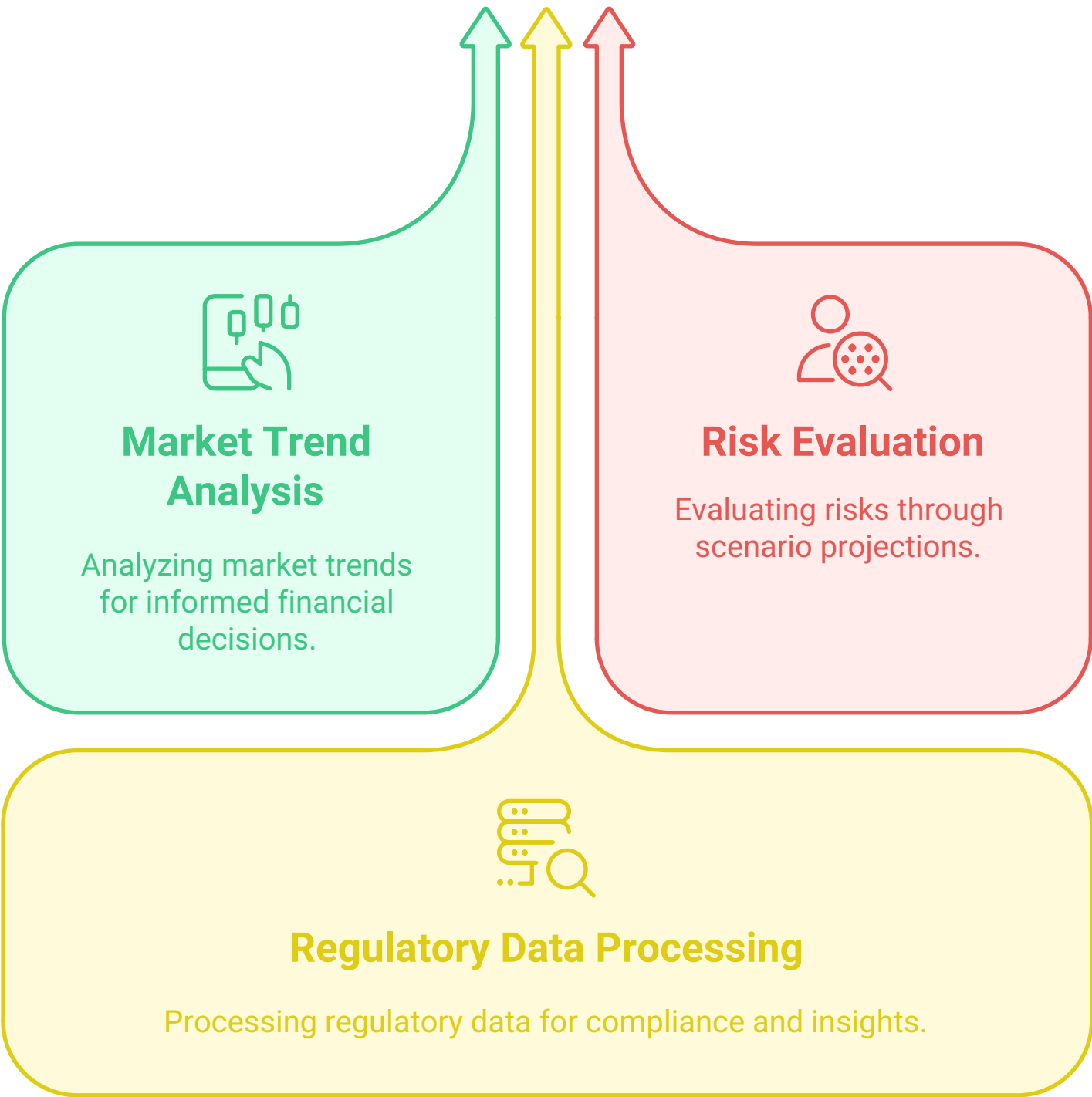
Vertical AI in Finance

Vertical AI in finance refers to AI systems specifically designed to include rapid large-scale data analysis, helping quasi real-time transparency and decision support, risk management, regulatory compliance, and customer service within a given context. Financial institutions have already automated a lot of repetitive tasks through various waves of technological evolution like Robotic Process Automations [RPA – 2015 onwards...] and Intelligent Process Automations [IPA... not the one you can drink – 2019 onwards...] but they continue to require solutions that are both specialized and adaptive to the complexities of the industry, and VAI could answer this need by providing tailored and contextualised capabilities within a single ecosystem.

Multi-agent collaboration in vertical AI enhances these specialized systems by allowing different AI models to work in parallel and share insights in an orchestrated manner. Each agent performs a specific task based on its expertise—whether it’s analyzing market trends, evaluating risks [scenario projections], or processing regulatory data—and collaborates with other agents to form a comprehensive, more effective solution. This synergy increases the speed, accuracy, and adaptability of financial decision-making.

I should mention here that AI agents have already been able to perform their own research to produce academic papers [generating ideas, conducting literature reviews, designing experiments, analyzing data and writing manuscripts] – ... I am not a technical expert, but doesn’t that remind anyone of “Skynet” in Terminator?

Synergistic AI Collaboration



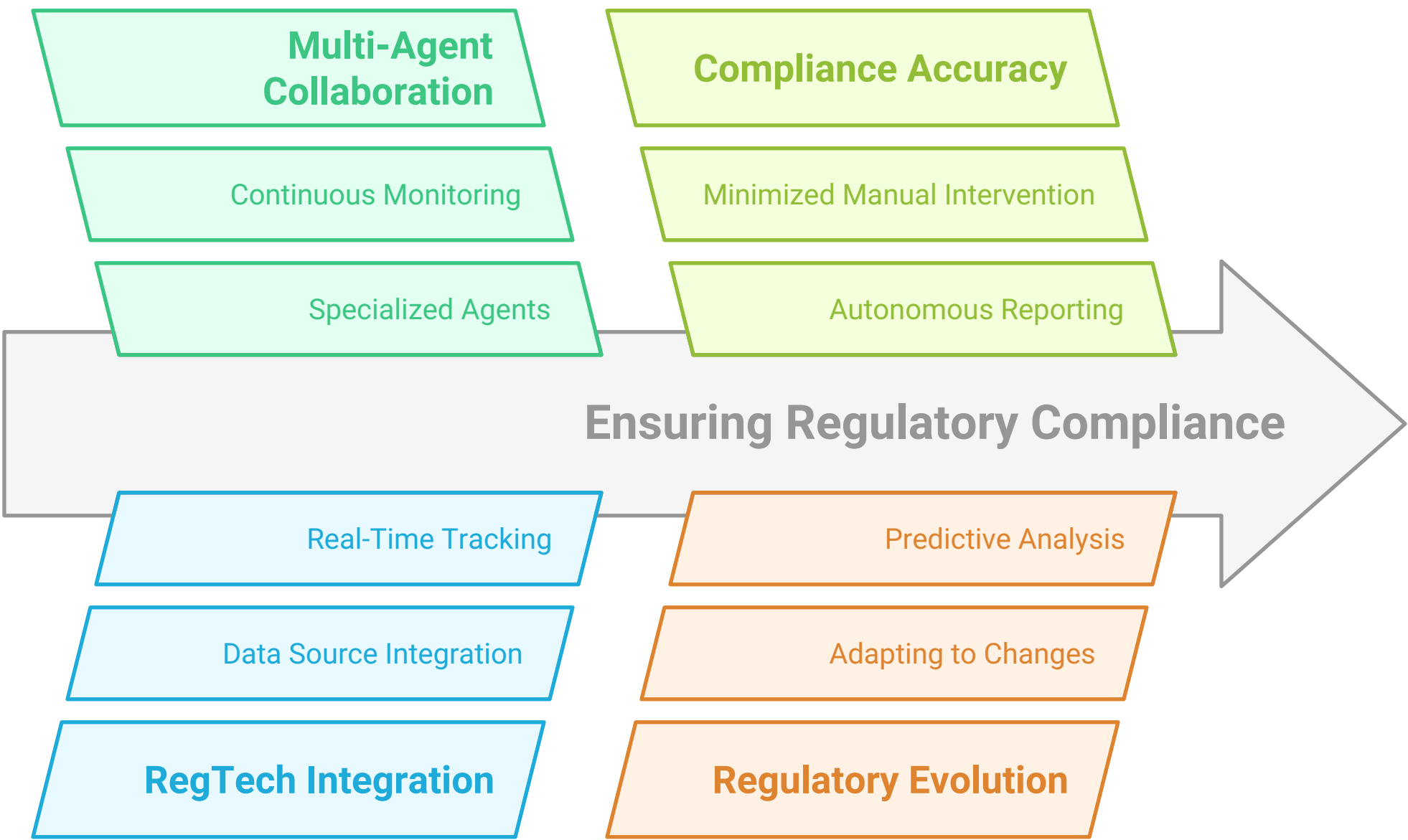
A non-exhaustive list of applications of Vertical AI in Finance

1. Regulatory Compliance and Reporting

- **Automated Compliance Monitoring:** Regulatory compliance is one of the most critical areas in finance. Multi-agent collaboration can streamline the monitoring of regulatory requirements by having different agents focus on distinct aspects of compliance, such as Anti-Money Laundering (AML), Know Your Customer (KYC) procedures, and transaction monitoring. Each agent specializes in its domain, working together to ensure that institutions remain compliant with various regulations, minimizing the risk of legal violations. Imagine performing checks on a continuous basis with a 99.9% accuracy target, freeing human time for supervision and contextual validation in the process.
- **RegTech:** The growing field of **RegTech** can use multi-agent systems to automate compliance processes across different regulatory frameworks. These systems can integrate with multiple data sources, track compliance in real time, and generate reports autonomously. Collaboration between agents enables financial institutions to reduce manual intervention, improve compliance accuracy, and keep pace with evolving regulatory requirements.

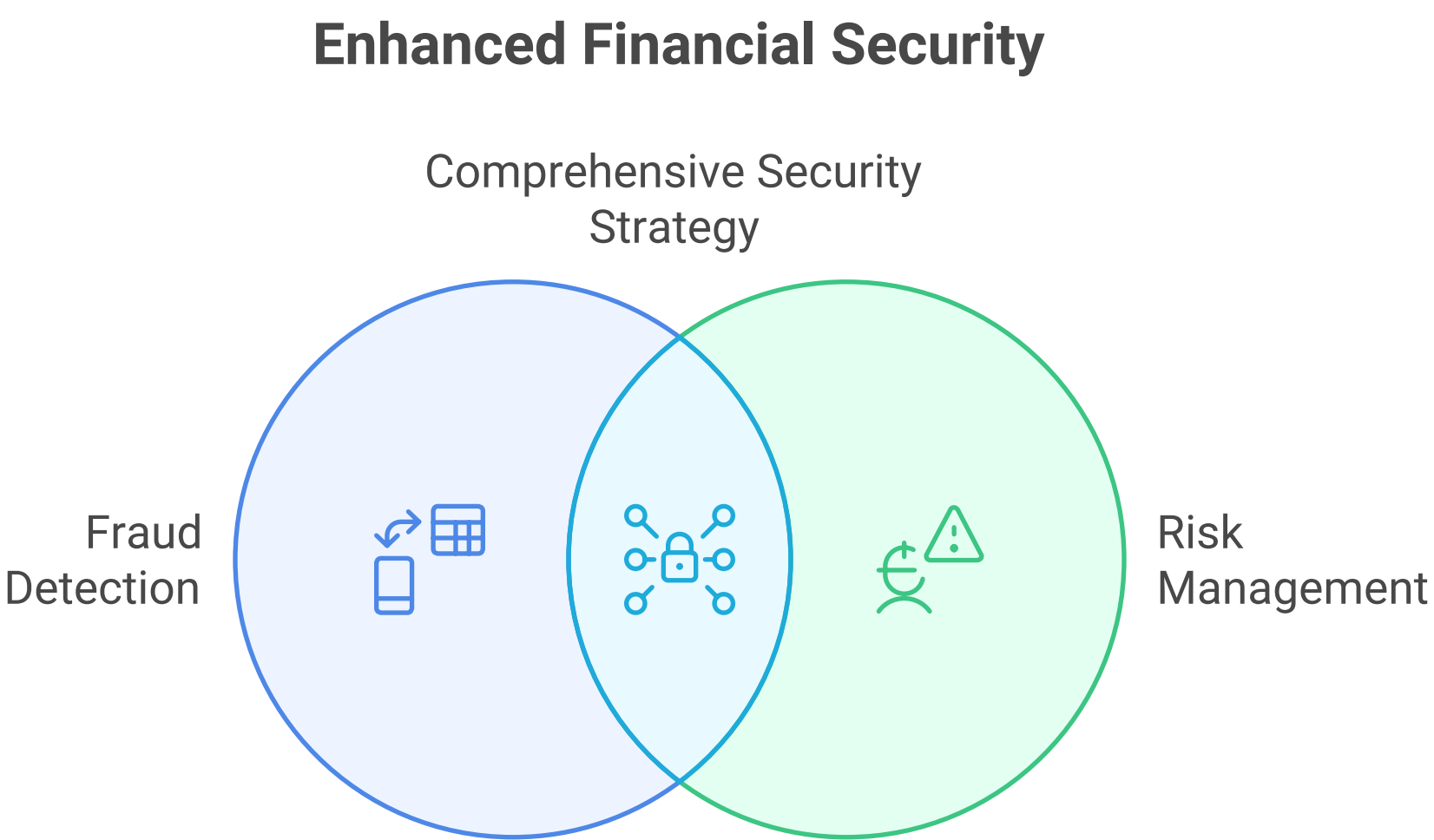
Of course, all this will come at a cost, but you know the saying: “if you think compliance is expensive, try the alternative...” [I am quoting the person at BNP who 10 years ago had to write a \$9 billions cheque to the US Treasury for breaching US Sanctions... bless their soul...]

Enhancing Regulatory Compliance in Finance



2. Fraud Detection and Risk Management

- **Fraud Detection:** Multi-agent collaboration in fraud detection systems allows different AI agents to focus on analyzing distinct types of data [maybe even across multiple jurisdictions where data cannot permeate] such as transaction records, historical fraud patterns, and user behavior. These agents work together to flag suspicious activity with greater accuracy, providing a coordinated and more robust response to fraud.
- **Risk Management:** Financial institutions face various risks, including market volatility, credit risk, and operational risk. Multi-agent systems in VAI can address these challenges by having each agent focus on a different type of risk, then collaborate to create a comprehensive risk profile. For instance, one agent might focus on market trends analysis, while another evaluates complex counterparty credit exposure, combining insights to help institutions make more informed and strategic risk management decisions.

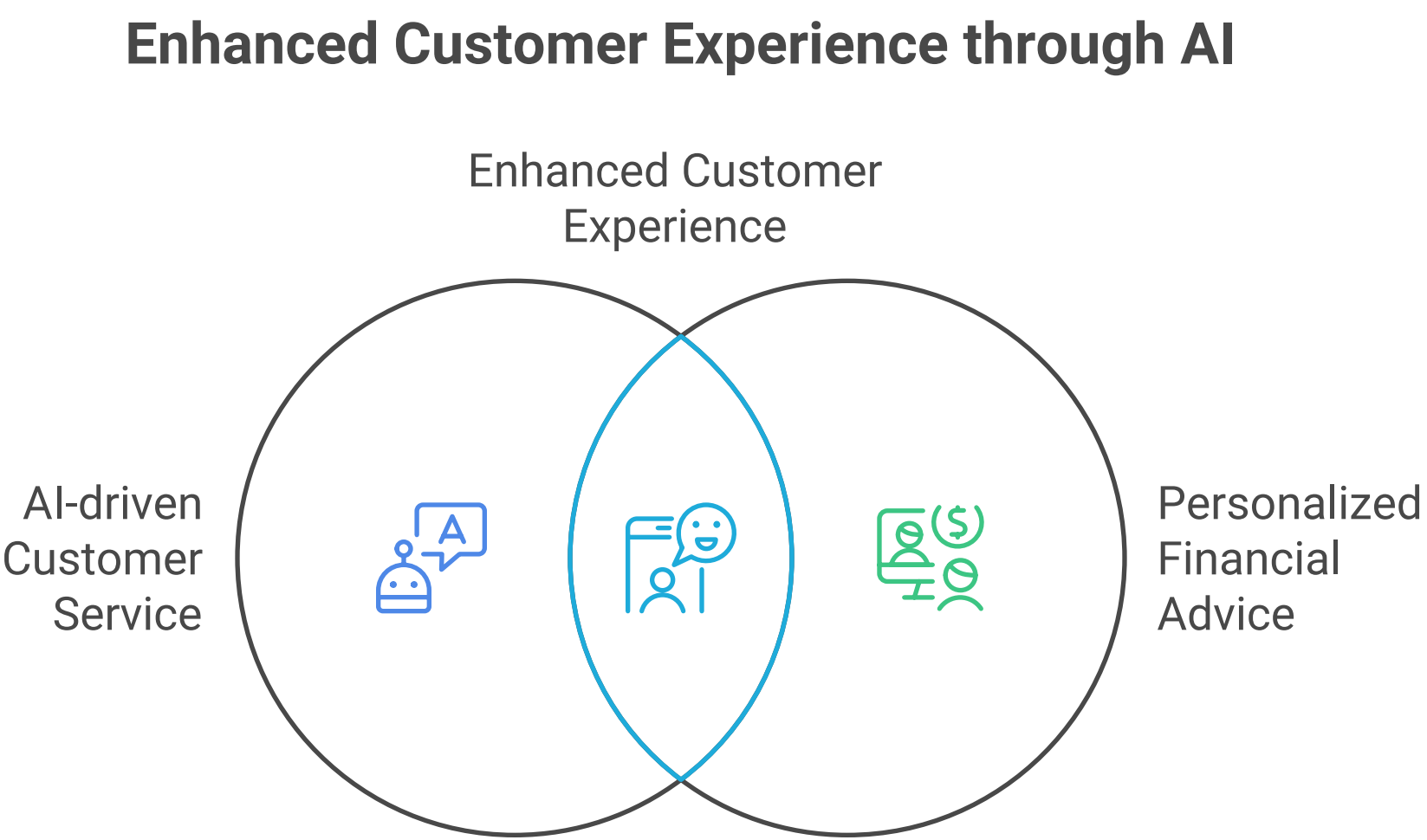


Clearly, I believe that items 1 & 2 above are the core point of focus for AI in financial markets these days.

3. Customer Service and Personalization

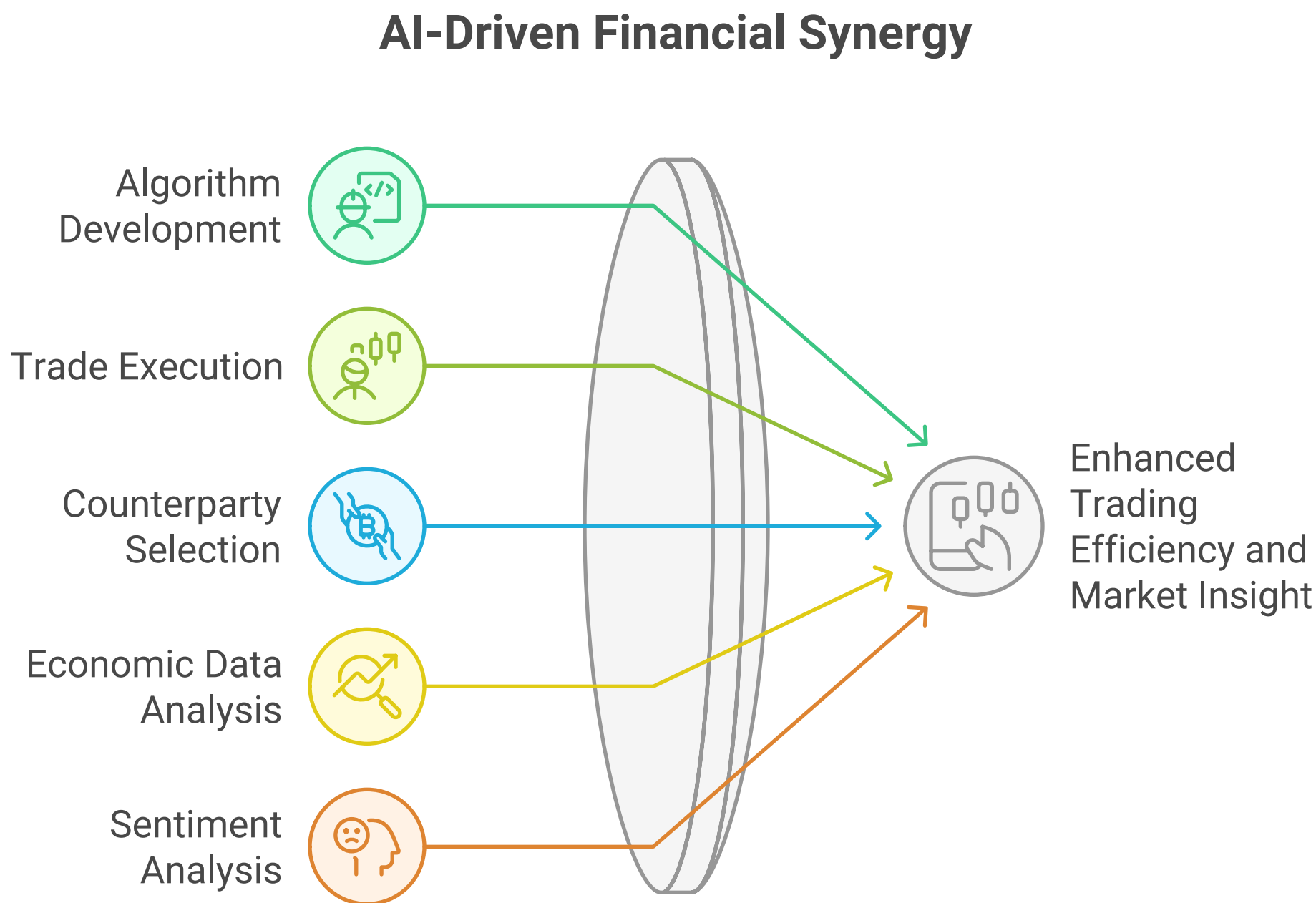
• **Chatbots and Virtual Assistants:** Multi-agent collaboration enhances customer service through advanced AI-driven chatbots and virtual assistants. Different agents within the system can handle specific aspects of customer interactions, such as providing day to day maintenance, guiding loan applications or managing client onboarding. By working together, these agents offer a more personalized and efficient service experience, providing real-time responses tailored to customer needs. I must quote the excellent work I see with the chatbot implemented by Revolut which are by far the most efficient I have seen in a while. Hats off to them! [glad to be an investor 🎩]

• **Personalized Financial Advice:** The value of an IFA or a private banker typically resides in sitting “on the side” and removing all emotions from investment decisions with a laser focus and insight on markets for a given risk appetite. AI agents will have no difficulty removing human emotions as you guessed. In practice, one agent might evaluate market conditions, while another analyzes a client’s financial goals and implied limitations or investment factors and yet another interfaces with the client to provide a personalized translation of investment suggestions and converse in a tone that suits the client’ specific background and requirements. These agents could collaborate to create a personalized investment portfolio that adapts to changes in both the market and the client’s financial situation without emotion, but a programmed empathy level specifically dialed to the tune of the client. This can go into 2 directions at the same time: Private banking 2.0 available for the masses and increased performance to the most advanced IFAs that will be equipped with the right tooling. A single person with the right tools could perform the role of multiple people and have all necessary information readily available at all times.



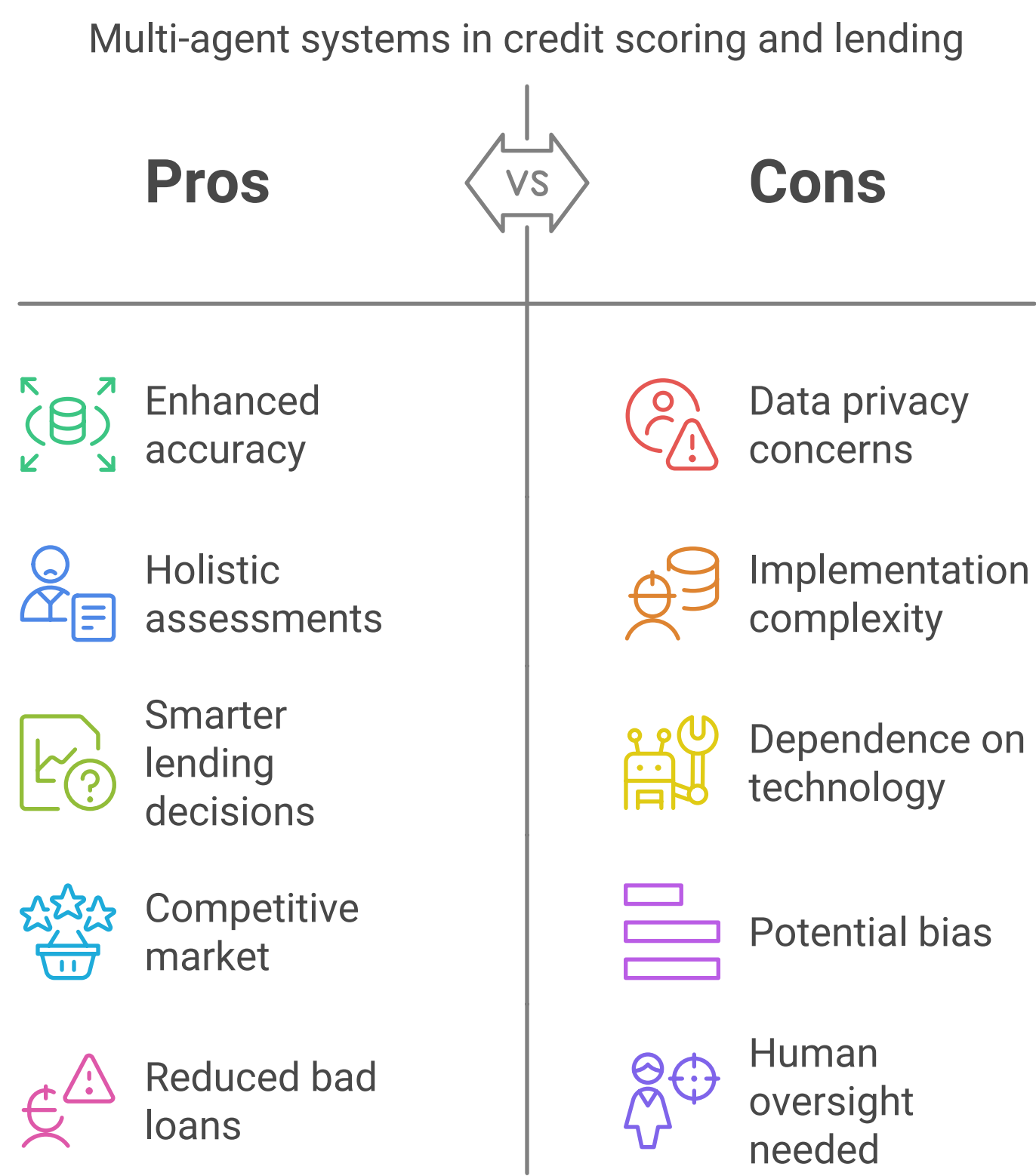
4. Algorithmic Trading and Market Analysis

- **Algorithmic Trading:** Multi-agent collaboration in algorithmic trading allows AI agents to specialize in different aspects of trading, such as devising the algos (or helping such endeavours), identifying optimal trade entry/exit points but also ensuring selection of best counterparties based on credit and market factors, analyzing macro and micro-economic data, or understanding social media sentiment simultaneously. These agents collaborate by exchanging data in real time, executing trades more efficiently than traditional methods. By sharing data, they can identify patterns and make swift decisions that maximize returns while minimizing risks. With the right level of maturity and broader adoption, I even think that some market disruptions could also be mitigated if not avoided.
- **Market Sentiment Analysis:** In addition to analyzing structured financial data, multi-agent systems can process unstructured data from multiple sources, such as news articles, social media feeds, and investor reports. Each agent might specialize in analyzing a specific data type, such as sentiment from news articles or real-time social media chatter (removing agentic trolls hopefully). These agents could collaborate to synthesize market sentiment, giving financial firms a deeper understanding of market trends and informing better trading strategies.



5. Credit Scoring and Lending

- **Alternative Credit Scoring:** Traditional credit scoring models rely heavily on limited data, often excluding individuals with sparse credit histories. Multi-agent systems enhance credit scoring by analyzing alternative data sources, such as transaction histories, social media activity, and even psychological profiles. Each agent focuses on a different data stream, and by collaborating, they can offer a more holistic and accurate assessment of a borrower’s creditworthiness.
- **Loan Default Prediction:** Multi-agent collaboration is also useful in predicting loan defaults. Each agent can focus on a particular risk factor—such as borrower credit history, current financial stability, or market conditions—and work together to create a more reliable prediction of a loan’s likelihood to default. This helps lenders make smarter decisions and reduce their exposure to bad loans.
- **Credit Rating Agencies:** Issuer rating is a human intensive endeavour that is currently occupied by a handful of suppliers who operate in an almost oligopolistic market. It probably will not take long for a new intrant to automate/industrialise/agentise the bulk of the load and offer a more competitive [and still satisfactory] proposition assuming the methodology is proven and transparent. This is just prospective, I realise there is a lot of value a human still delivers in performing this analysis.



Incoming trends that could accelerate:

1. Integration with Quantum Computing

- The integration of **quantum computing** with [vertical] AI systems, as I implied in a previous article, promises to revolutionize financial analysis. Quantum computing will enable AI systems to process data faster and more efficiently. For example, quantum-enhanced AI models could enable real-time risk analysis or more accurate market predictions. A “Black Swan” event would be much more likely to be forecasted and even avoided with such computing power. Right now this is still Blue Sky but so was Agentic AI even 2 years ago...

2. Blockchain and AI Synergy

- The combination of **blockchain** and AI allows for the development of more secure, transparent, and efficient financial systems. Multi-agent AI models can interact with blockchain systems to monitor transactions, validate smart contracts, and detect fraudulent behavior. Each agent focuses on a specific task, such as transaction verification or contract execution, but they work together to ensure the integrity and security of financial transactions across the blockchain. I realise that Quantum Computing is expected to be able to decipher BlockChain so maybe this is negated by point 1 above.

3. Big Data and Cloud Infrastructure

- The shift towards **cloud computing** and **big data infrastructure** is enabling VAI to scale up significantly. Multi-agent collaboration thrives in cloud environments, as it allows agents to access shared data in real time, analyze large datasets, and coordinate their efforts. One could imagine a specific set of data base per agent to allow better control and enhanced security and a final agent checking consistency in behaviour and output before involving a human.

Of course, I should repeat here that clean data and a clear vision of the final infrastructure are paramount to the success of any AI endeavour.

4. Sustainability and ESG Investing

- **Environmental, Social, and Governance (ESG)** factors seem to have gone slightly out of fashion recently on one side of the Atlantic specifically but remain a very relevant set of lenses among investors, in Europe more particularly. There are already systems that can help assess ESG risks across investment thesis but also through regulatory requirements to evaluate various dimensions of ESG within a given portfolio [or many at once]—such as a company’s carbon footprint, climate and/or biodiversity impact, its governance structure, and its social impact. The analysis can be done ex-post or ex-ante but what if an agent was able to perform those check during the portfolio construction phase and dynamically advise managers that a trade needs to be adjusted or offset to avoid a breach in investment policy. Maybe another agent could simultaneously provide offset suggestions taking into accounts other parameters such as collateral requirements, counterparty exposure or even instrument limitations.

The Benefits of Vertical AI in Finance

1. Improved Efficiency:

- Vertical AI powered by multi-agent collaboration will optimize workflows by automating complex tasks and enabling faster data analysis. By allowing multiple agents to work together seamlessly, financial institutions can improve the efficiency of operations, from risk assessment to customer service.

2. Enhanced Accuracy:

- Multi-agent systems provide a more nuanced approach to decision-making by combining the expertise of different AI agents. Each agent specializes in a different data stream or task, allowing for more accurate predictions and insights in areas like fraud detection, market analysis, and lending.

3. Faster Decision Making:

- The collaboration between specialized agents enables faster data processing and decision-making. Whether it's reacting to market changes or responding to customer queries, multi-agent systems make it possible to achieve real-time results that improve the speed of business operations.

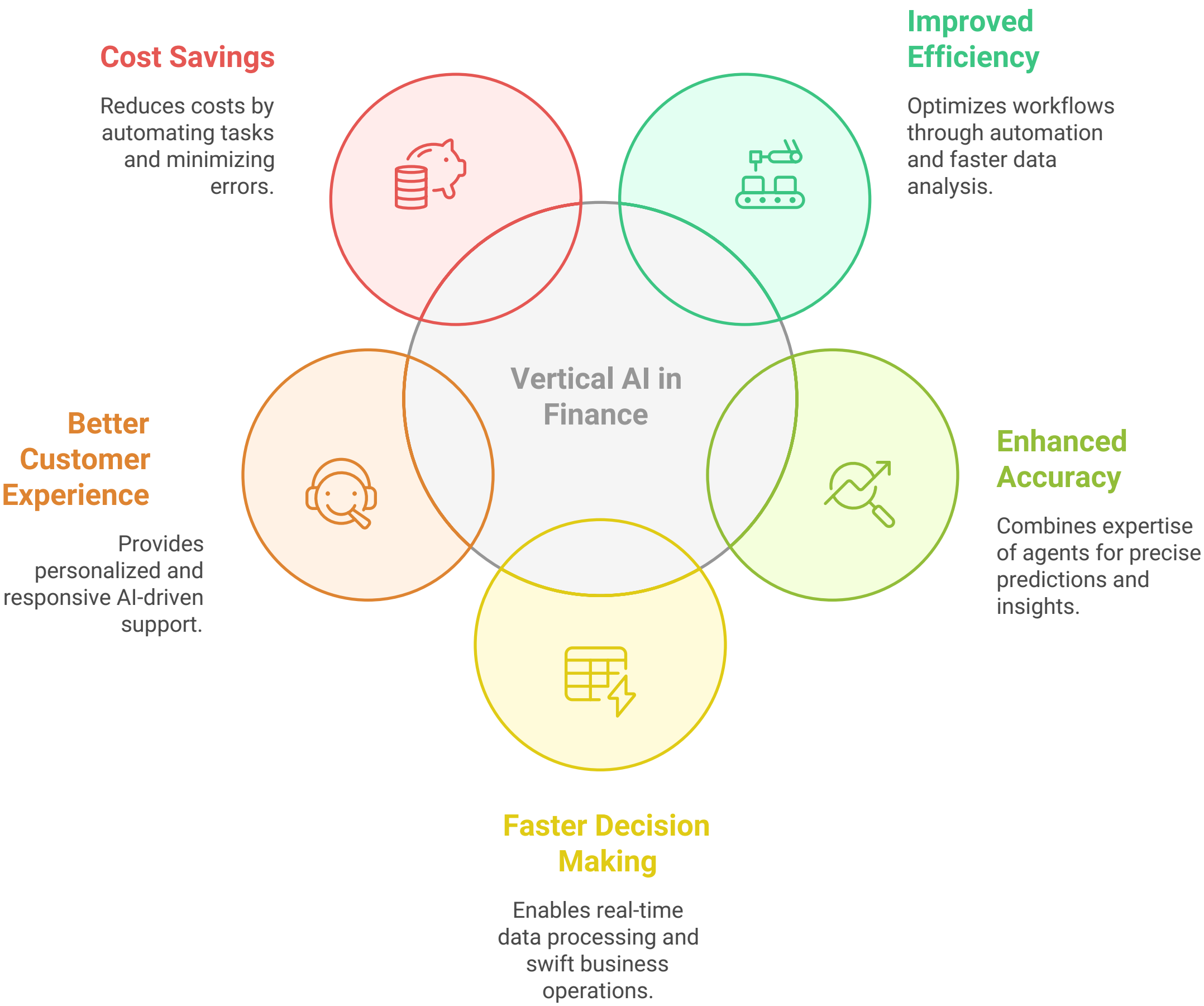
4. Better Customer Experience:

- AI-driven customer service systems, powered by multi-agent collaboration, can provide highly personalized and responsive support. By specializing in different aspects of customer interactions, such as queries about accounts or investments, these agents work together to offer tailored solutions that improve the overall customer experience. [wink wink Revolut]

5. Cost Savings:

- Multi-agent systems reduce operational costs by automating tasks, minimizing errors, and increasing the efficiency of complex processes. For example, automating fraud detection, risk management, and compliance monitoring can significantly reduce the need for manual intervention and improve cost efficiency.

Transforming Finance with Vertical AI and Multi-Agent Systems



Conclusion: The Future of Finance

Vertical AI, enhanced by multi-agent collaboration, will be transforming the financial industry by providing more accurate, efficient, and tailored solutions. The synergy of specialized agents allows for deeper insights, faster decision-making, and more effective risk management. As technologies like quantum computing, blockchain, and big data continue to evolve, multi-agent systems will become even more powerful, enabling financial institutions to stay ahead in an increasingly complex and competitive market.

The future of finance is data-driven, AI-powered, and collaborative. By embracing VAI and multi-agent collaboration, financial institutions can unlock new levels of efficiency, innovation, and customer satisfaction, securing their place in a rapidly changing industry.

Future of Finance Transformation

