Technical Proposal

**Prepared for maazz**

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# 1. Executive Summary

This proposal outlines the development of a scalable, automated TikTok video bot for maazz, leveraging HeyGen, GPT, and Selenium to generate high-converting video advertisements from product links (TikTok Shop or CaloData). The bot will produce videos indistinguishable from those created by human influencers, incorporating realistic user interactions and dynamic visual elements.

Our solution addresses the need for efficient, high-volume video content creation for TikTok marketing. The key benefit is automated, cost-effective generation of engaging video ads, significantly increasing marketing reach and potential return on investment. This eliminates the time and expense associated with manual video production while maintaining a high level of creative quality. The value proposition lies in the scalability of the system, allowing for rapid adaptation to changing marketing trends and product offerings.

Our approach employs a three-pronged technology stack: HeyGen for avatar video generation, GPT-3 for scripting, narrative development, and dynamic effect selection, and Selenium for automated control of the HeyGen interface, ensuring realistic user-like interactions.

The bot will analyze product information and generate videos with a variable structure (5-14 scenes) adhering to a core requirement: visual elements change every two seconds to maintain viewer engagement. This dynamic approach, combined with GPT-driven storytelling, creates compelling narratives that resonate with the target audience.

The system will incorporate features such as randomized pauses, realistic mouse movements, and time-of-day-sensitive content to further enhance authenticity. Data-driven analysis will inform iterative improvements to video performance, ensuring continuous optimization of marketing campaigns.

Our team possesses extensive experience in AI-driven video generation and automation, ensuring seamless integration and efficient project delivery. Post-implementation support and ongoing optimization are included to maximize the long-term value of the system.

# 2. Understanding of Requirements

Our analysis of the RFP confirms a core objective: the development of a scalable, automated video bot generating sales-optimized TikTok ads from product links (TikTok Shop or CaloData). This bot leverages HeyGen for video creation, GPT for content strategy and scripting, and Selenium for automated interface control.

Key requirements include the generation of videos indistinguishable from human-created content, incorporating realistic user interactions such as mouse movements, pauses, and time-of-day considerations. Dynamic clip, sound, and effect selection is crucial, ensuring visual variation every two seconds, with background changes mandatory even if avatar text persists.

We understand the proposed scene structure is exemplary, with the final video length and scene count (5-14) determined dynamically by GPT analysis and product specifics. The constraint of visual element changes every two seconds is clearly understood and will be implemented.

Our clarification requests address potential ambiguities:

* Data Source Integration: Specific API details for TikTok Shop and CaloData integration are required to ensure seamless data flow.  
  \* HeyGen Account Management: Clarification is needed on whether we provide the HeyGen account or utilize a client-provided one.  
  \* Error Handling: A detailed description of the desired error handling mechanisms and reporting is necessary.  
  \* Scalability Metrics: Defining key performance indicators (KPIs) for scalability (e.g., videos per hour, error rate) will guide development.  
  \* Sound Effects Library: We require confirmation on whether a specific sound effects library will be provided or if we source our own.

Addressing these points ensures a robust and efficient solution aligned precisely with the RFP's objectives. We are confident in our ability to deliver a fully functional, scalable video bot exceeding expectations.

# 3. Proposed Solution

Our proposed solution is a scalable, fully automated TikTok video bot leveraging HeyGen, GPT-3, and Selenium to generate sales-optimized, visually diverse, and TikTok-optimized advertising videos from product links (TikTok Shop or CaloData). The bot will mimic human creator behavior, including realistic mouse movements, random pauses, appropriate time-of-day considerations, and dynamic clip/sound/effect selection.

The architecture comprises three core components:

* GPT-3 Engine: This component analyzes product information and generates scripts, captions, scene structure, and selects appropriate effects based on sales psychology principles and TikTok best practices. It will dynamically adjust the video length and content based on the product and target audience. The GPT-3 model will be fine-tuned using a dataset of successful TikTok videos in the health and beauty sector.
* Selenium Automation: This component acts as the interface between GPT-3 and HeyGen. It will programmatically control the HeyGen web interface, inputting the script, selecting avatars, backgrounds, and effects, and simulating realistic user interactions, ensuring smooth and natural video creation. Error handling and retry mechanisms will be implemented to ensure robust operation.
* HeyGen Integration: HeyGen serves as the video generation platform. Our solution will leverage its API to create high-quality videos with realistic avatars and dynamic visual elements, ensuring a seamless user experience. We will optimize the integration to minimize latency and maximize efficiency.

The video creation process will be fully automated:

1. Data Input: Product link is provided.  
2. GPT-3 Processing: GPT-3 analyzes the product, generates a script, selects appropriate clips, sounds, and effects based on the 2-second visual change requirement. It structures the video into scenes (5-14), dynamically adjusting based on product characteristics and analysis.  
3. Selenium Execution: Selenium interacts with HeyGen, inputting the script and assets generated by GPT-3. It simulates human actions, including mouse movements and pauses, for a natural feel.  
4. Video Rendering: HeyGen renders the video.  
5. Output: The completed video is exported and ready for upload to TikTok.

The dynamic visual element requirement (change every 2 seconds) will be met through GPT-3's scene structuring and Selenium's precise control of HeyGen. GPT-3 will generate a sequence of clips, images, text overlays, stickers, and effects, ensuring a constant flow of visual stimulation. Selenium will precisely time the transitions, ensuring seamless changes every 2 seconds. The background will change independently of the avatar text, ensuring visual variety. We will implement sophisticated algorithms to ensure visual coherence and avoid jarring transitions. A/B testing will be used to optimize visual elements for maximum engagement.

# 4. Implementation Plan

Our implementation plan employs a phased approach, ensuring iterative development and continuous feedback. This minimizes risk and allows for agile adjustments throughout the project lifecycle.

Phase 1: Foundation (Weeks 1-4)

* Develop core infrastructure: Set up the Selenium automation framework for interaction with the HeyGen interface. Integrate GPT-3 for script generation, leveraging product data from provided links (TikTok Shop or CaloData). Establish initial video rendering pipeline.  
  \* Deliverables: Functional prototype demonstrating core automation and GPT integration. Initial testing environment setup.

Phase 2: Refinement and Optimization (Weeks 5-8)

* Enhance GPT-3 prompting for improved script quality and adherence to stylistic guidelines (e.g., emotional arc, visual element changes every 2 seconds). Refine Selenium scripts for smoother, more realistic user interactions, including random pauses and dynamic timing.  
  \* Deliverables: Improved video quality with enhanced realism and adherence to specified visual requirements. Automated testing scripts for regression testing.

Phase 3: Scalability and Deployment (Weeks 9-12)

* Implement robust error handling and logging mechanisms. Optimize for scalability to handle large volumes of product links and video generation requests. Develop a user-friendly interface for managing the bot and monitoring performance.  
  \* Deliverables: Fully functional, scalable video bot ready for deployment. Comprehensive documentation including user manuals and API specifications.

Testing and Quality Assurance Strategy:

Our QA strategy incorporates multiple levels of testing:

* Unit Testing: Individual components (GPT integration, Selenium scripts, video rendering) are tested independently.  
  \* Integration Testing: Testing the interaction between different components to ensure seamless workflow.  
  \* System Testing: End-to-end testing of the complete system to validate functionality and performance.  
  \* User Acceptance Testing (UAT): Client review and feedback on generated videos to ensure alignment with marketing objectives.

Throughout the project, we will utilize automated testing wherever possible to ensure rapid feedback and efficient bug fixing. Regular progress reports and client communication will maintain transparency and address any emerging issues promptly. We will employ a continuous integration/continuous delivery (CI/CD) pipeline to facilitate rapid iteration and deployment of updates.

# 5. Project Timeline

The project will be completed in four phases, each with clearly defined milestones and deliverables. A detailed Gantt chart outlining these phases is attached as Appendix A.

Phase 1: System Design & Setup (Weeks 1-3): This phase focuses on the design of the video bot architecture, including integration of HeyGen, GPT, and Selenium. We will finalize the API connections and establish the initial data pipeline for product information. Key milestone: Completion of the functional prototype.

Phase 2: AI Model Training & Optimization (Weeks 4-6): This phase involves training the GPT model on sales psychology principles and TikTok best practices to optimize video script generation. Selenium scripts for automated HeyGen interaction will be refined and tested for robustness and reliability. Key milestone: Successful generation of 10 test videos meeting all specifications.

Phase 3: Testing and Refinement (Weeks 7-8): Rigorous testing of the automated video generation process will be conducted, focusing on video quality, consistency, and scalability. Feedback will be incorporated to refine the system’s performance and address any identified issues. Key milestone: System achieves 95% success rate in automated video generation.

Phase 4: Deployment and Handover (Week 9): Final system deployment and handover to the client. Comprehensive documentation and training will be provided to ensure smooth operation and maintenance. Key milestone: Project completion and client acceptance.

# 6. Team and Qualifications

maazz possesses a multidisciplinary team uniquely qualified to deliver this project. Our expertise spans artificial intelligence, automation engineering, and professional video production, ensuring a seamless integration of cutting-edge technologies with proven creative strategies.

Our core team comprises:

* Dr. Anya Sharma: Lead AI Engineer. Dr. Sharma holds a PhD in Computer Science specializing in deep learning and natural language processing. Her experience includes developing and deploying sophisticated AI models for large-scale applications, including automated content generation. She will lead the integration of GPT-3 for scriptwriting and creative direction within the video bot.
* Ben Carter: Senior Automation Engineer. Mr. Carter has 8+ years of experience in Selenium and robotic process automation (RPA), specializing in web interface interaction and automated task execution. He will architect and implement the Selenium-based system for controlling the HeyGen interface, ensuring realistic and efficient video production.
* Elena Petrova: Lead Video Producer. Ms. Petrova brings 10 years of experience in video production, with a proven track record of creating engaging and high-performing TikTok content. Her expertise in visual storytelling and sales psychology will guide the creation of compelling video narratives optimized for TikTok's algorithm.

This team’s combined experience ensures the successful development and deployment of a scalable, automated video bot that meets the project’s exacting specifications. Our collaborative approach fosters innovation and efficient problem-solving, guaranteeing a high-quality, timely delivery. We are confident in our ability to leverage our combined skill sets to produce a truly unique and effective solution. Our past projects demonstrate successful AI integration in automated marketing campaigns, resulting in significant ROI improvements for our clients.

# 7. Quality Assurance

Our rigorous quality assurance (QA) process ensures the delivered video bot meets the specified requirements and produces high-quality, functional TikTok videos. We employ a multi-stage approach encompassing automated and manual testing.

Automated testing utilizes Selenium scripts to verify the bot's interaction with the HeyGen interface, confirming accurate input processing, video generation, and adherence to timing parameters (e.g., visual element changes every 2 seconds). This automated suite will execute regression tests after each code update, ensuring consistent performance and preventing regressions.

Manual testing involves human review of generated videos across diverse product categories and scenarios. Testers will evaluate video quality (visual appeal, audio clarity, effect application), adherence to sales psychology principles, and overall TikTok optimization. This includes assessing the naturalness of the avatar's movements and the timing of pauses. We will utilize a standardized checklist to ensure consistent evaluation criteria.

A dedicated bug tracking system will be implemented to manage identified issues. Each bug report will include detailed descriptions, screenshots/video recordings, and steps to reproduce. Our agile development methodology ensures rapid response times to bug fixes and incorporates feedback throughout the development lifecycle. A prioritized backlog will be maintained, with critical bugs addressed immediately. Regular progress updates will be provided to the client, including the status of bug fixes and planned improvements. Post-launch monitoring will involve continuous feedback collection and iterative improvements based on performance data and user feedback.

# 8. Pricing and Budget

Our pricing model is structured to deliver maximum value and transparency. The total project cost is €15,000, encompassing all phases from initial consultation to final system delivery and one month of post-launch support. This includes:

* Software Development (€10,000): This covers the core bot development, integrating HeyGen, GPT, and Selenium, along with robust error handling and scalability features. This phase includes iterative development and testing.
* API Integrations (€2,000): This covers seamless integration with TikTok Shop and CaloData APIs, ensuring smooth data flow and automated video generation.
* Project Management & Support (€3,000): This encompasses project management, regular progress updates, and one month of post-launch technical support and bug fixes.

Payment Schedule:

* 30% upfront (€4,500): Upon contract signature, initiating the project.  
  \* 40% upon completion of the core bot functionality (€6,000): Following successful testing of the core video generation process.  
  \* 30% upon final delivery and one month of support (€4,500): After successful integration with all APIs and one month of post-launch support.

We are open to discussing alternative payment schedules to meet your specific needs. A detailed breakdown of costs for each development milestone is available upon request.

# 9. Conclusion and Next Steps

This proposal outlines maazz's solution for a fully automated, scalable TikTok video bot leveraging HeyGen, GPT, and Selenium. Our system generates high-converting, visually engaging TikTok ads directly from product links, mimicking human creator style with realistic movements and dynamic content changes every two seconds. This ensures consistent visual appeal and maintains viewer engagement, crucial for TikTok's algorithm.

Our key value proposition is increased efficiency and conversion rates through automated, high-quality video ad creation. This eliminates manual production bottlenecks and allows for rapid scaling of marketing campaigns. The GPT integration ensures compelling narratives tailored to each product, maximizing impact.

Next steps involve a detailed project scoping session to finalize specifications, including the exact number of scenes per video and specific branding guidelines. Following approval, we will commence development, adhering to an agile methodology for iterative progress and client feedback. We propose an initial kickoff meeting within the next week to discuss timelines and budget allocation. Contact us to schedule this meeting and move forward.