

Premium Service Recommendation

Status and Decision Logs (See more)	DISCOVERY
Driver	@Nguyen Minh Phuc Anh
RACI	<p>R: <i>the group of Responsible individuals, those who actually do the work, please specifically note a single name who plays the role of project Expert Accountable.</i></p> <ul style="list-style-type: none">• Product Lead: @Kelvin Vuong , Product Manager: @Nguyen Minh Phuc Anh• Product Designer: @Thao Duong• Engineering Manager: @Tharles - Ha Nguyen <p>A: @Kelvin Vuong</p> <p>C: <i>Who are consulted and whose opinions are sought during the process.</i></p> <p>I: <i>Who need updates on its progress or results</i></p>
Communication Channels	Link Slack channel

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Context [↗](#)

In the dynamic environment of the Chợ Tốt platform, sellers consistently seek effective ways to enhance the visibility and reach of their listings amidst a high volume of ads. Many sellers may not be fully aware of or effectively utilize the range of premium

services available to boost their listings' performance, such as featured placements or visibility enhancements. This represents a significant opportunity to improve seller success and drive platform revenue. To address this, the development of a personalized premium service recommendation feature is crucial. By analyzing individual seller's listing performance, past service usage, category specifics, and market trends, this feature will proactively recommend the most relevant and potentially beneficial premium services to sellers. The goal is to empower sellers to achieve better results with their listings while simultaneously increasing the adoption and value of Chợ Tốt's premium service offerings.

Insights [🔗](#)

Sales performance of PF in 03/2025

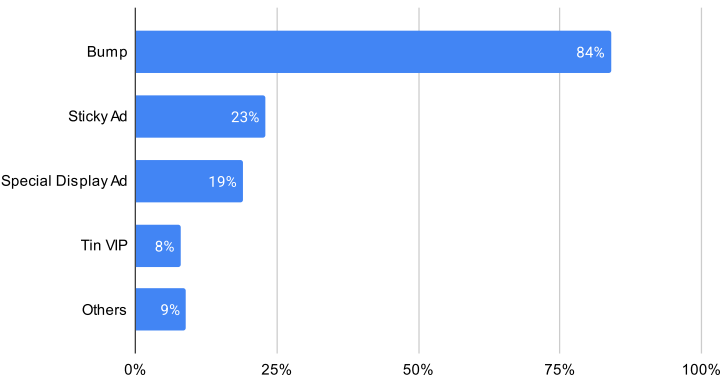
Service	Total PU	Total order
3days_bump	10,665	20,812
7days_bump	5,569	10,659
ad_delivery_cpc	69	273
bump	43,856	389,093
customized_bump	4,594	8,888
intensive_bump	6,186	11,746
job_seeker_database	218	352
special_display	19,265	38,033
sticky_ad	7,648	24,738
timer_bump	1,389	4,211

• Insights:

◦ User Insight:

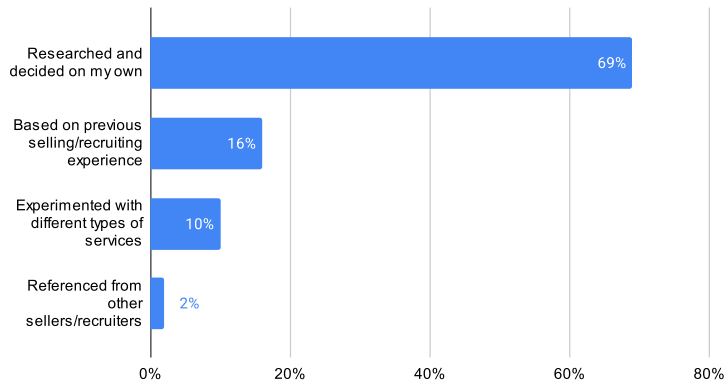
- User Feedback on Sales Effectiveness: [LINK](#)
- Seller Feedback on Premium Service:
We conducted a survey among 500 sellers who have AA since 01/01/2025
 - 69% of sellers has used PF
 - The PF user has used:

The PF user has used:



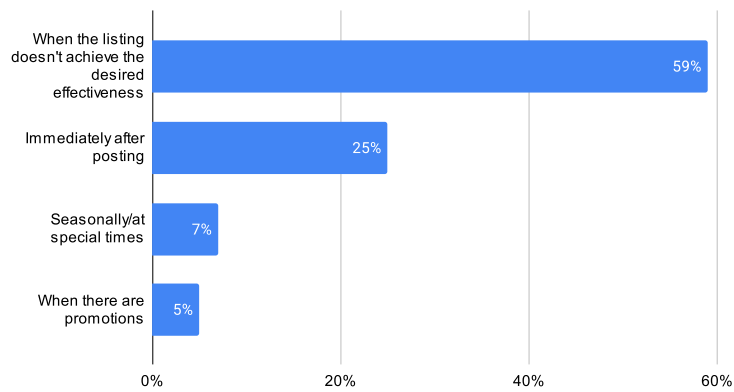
- How did sellers decide to use these services:

How did sellers decide to use these services



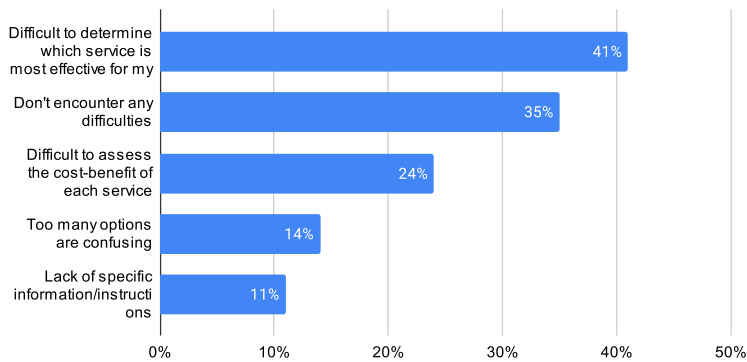
- When do sellers usually decide to use the PF:

When do sellers usually decide to use the PF



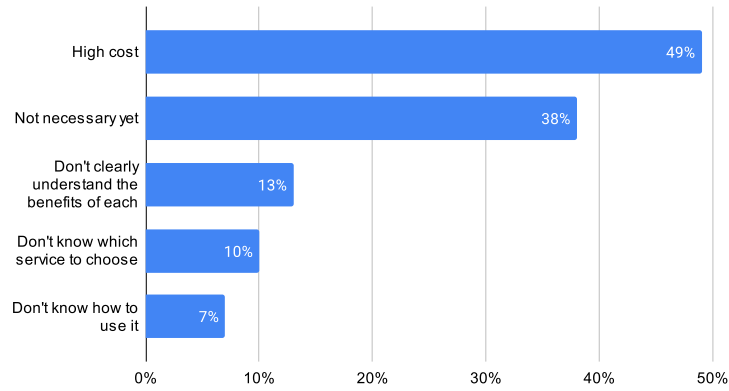
- Do sellers encounter any difficulties when choosing the appropriate service:

Do sellers encounter any difficulties when choosing the appropriate service



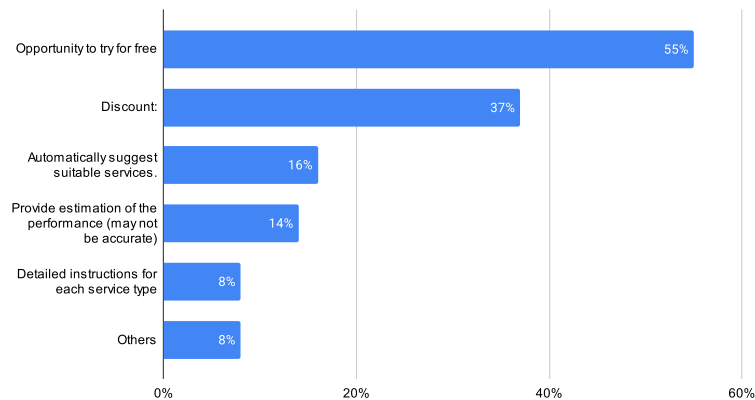
- 31% of sellers has not used PF
 - Reasons sellers haven't used PF:

Reasons sellers haven't used PF



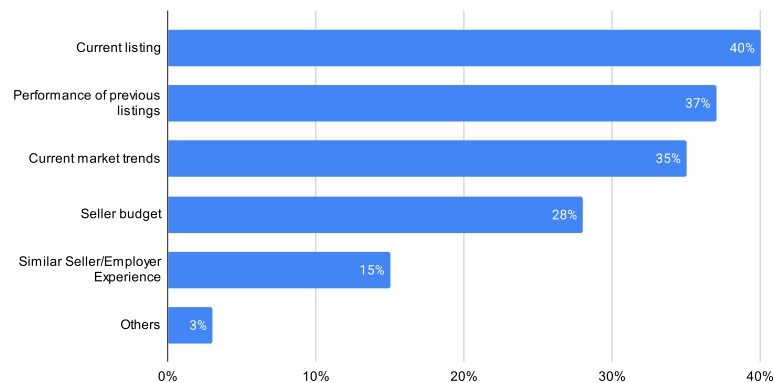
- High cost: 49%
 - Not necessary yet: 38%
 - Don't clearly understand the benefits of each service: 13%
 - Don't know which service to choose: 10%
 - Don't know how to use it: 7%
- What would make it easier for sellers to decide to use PF:

What would make it easier for sellers to decide to use PF



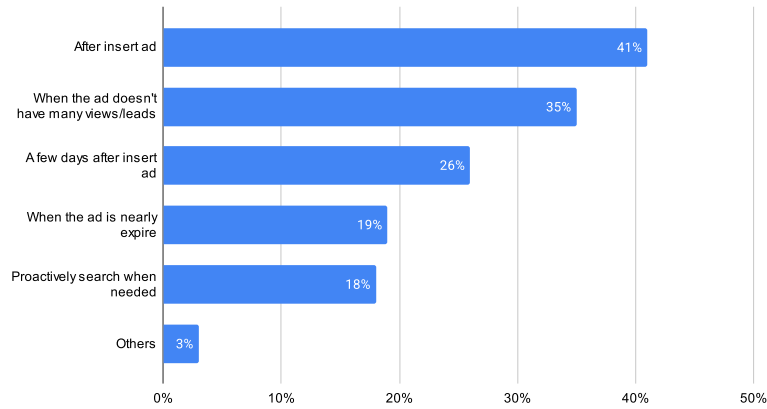
- All responders:
 - If Cho Tot develops a system to suggest services to use, what factors would sellers like to receive suggestions based on?

If Cho Tot develops a system to suggest services to use, what factors would you like to receive suggestions based on?



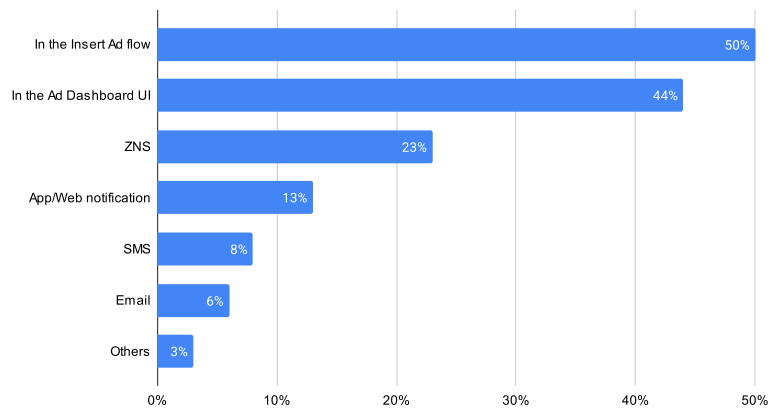
- When would sellers like to receive service suggestions

When would you like to receive service suggestions



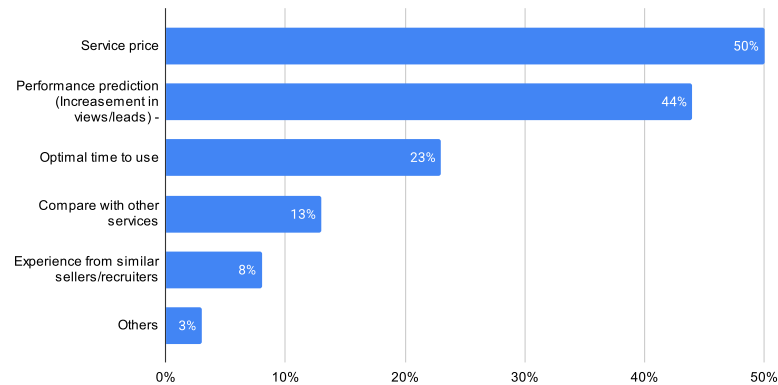
- How would sellers like to receive service suggestions?

How would you like to receive service suggestions?



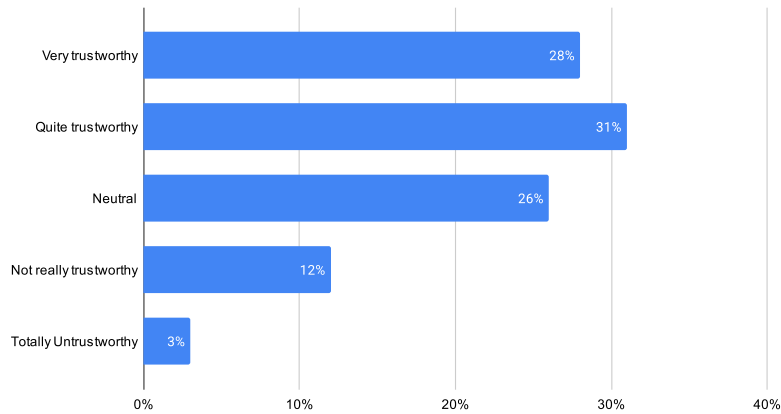
- What information about the PF would sellers like to be provided when receiving suggestions?

What information about the PF would you like to be provided when receiving suggestions?



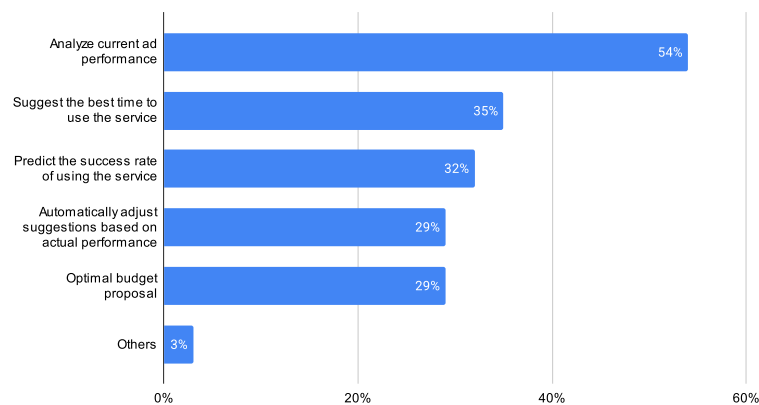
- How much do sellers trust Cho Tot's service recommendation system?

How much do you trust Cho Tot's service recommendation system?



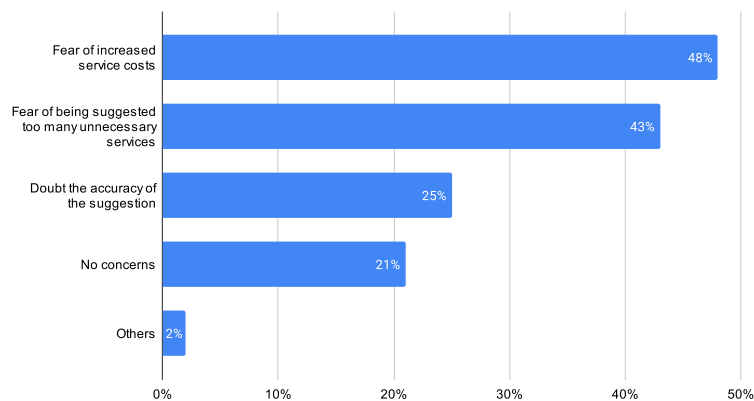
- What features do sellers expect a recommendation system to have?

What features do you expect a recommendation system to have?



- Do sellers have any concerns about the service recommendation system?

Do you have any concerns about the service recommendation system?



◦

- **User's Situation & Pain Points:** Sellers are facing difficulties in getting sufficient visibility and results for their listings, even when utilizing premium paid services. They are experiencing low numbers of applicants/buyers contacting them, leading to frustration and impacting their objectives (e.g., recruitment progress, selling items). Some sellers feel the effectiveness of the services they pay for is poor.
- **User Needs:** Sellers need to see tangible results from their efforts on the platform. They require guidance on which services are truly effective for their specific needs and listings to improve performance. There's an implicit need for recommendations that can help them avoid ineffective spending and achieve better outcomes.

- **Behaviors:** Some sellers are willing to pay for services to enhance their listings but may become dissatisfied if they don't see results, potentially leading to reduced trust in the platform's offerings. Others may be generally unsuccessful on the platform and might not know how to improve their situation, possibly becoming inactive.

This feedback highlights a critical user pain point: the lack of guaranteed effectiveness from existing services and a need for clearer pathways to success, which personalized recommendations could potentially address by guiding them to the most suitable and effective options for their situation.

- **Data Insight:**

- **Learnings from Key Leading Indicator Metrics:** Analysis of service usage data shows a high volume of activity around premium services, particularly the standard "bump" service. This indicates a general seller behavior towards paying for increased visibility. However, there's significantly lower adoption of the more specific "bump" types (3days, 7days, customized, timer, intensive) despite their distinct functionalities (e.g., timed bumps, smart bumps, bundling with display). This suggests either a lack of awareness, understanding of the specific benefits, or perceived complexity compared to the basic bump. Services like SDA and SA show moderate to high usage, indicating demand for prominent placement. The high order frequency for standard "bump" and "sticky ad" suggests repeat usage by satisfied or habitual users. The lower adoption of specialized bumps, despite their potentially advanced capabilities (like smart timing or bundling with other services like SA/SDA), presents an opportunity for recommendations to guide sellers towards these options if they align with their specific listing characteristics and goals.

- **Business Insight:**

- The core business need is to increase revenue through premium service adoption and improve seller success and retention. Strategically, offering personalized recommendations leverages our platform data to provide a value-added service that can differentiate Chợ Tốt in the market. Providing tailored guidance on promotion is becoming a standard expectation. Solving the problem of ineffective service selection for sellers directly impacts the business by increasing the likelihood of sellers seeing positive results, leading to higher satisfaction, repeat premium service purchases, and overall platform growth. It transforms premium services from a list of options into guided solutions for sellers' specific needs.

- **Findings Summary:**

- **Problems & Opportunities:** Sellers are struggling with listing visibility and effective promotion, sometimes finding premium services ineffective. Data shows high usage of basic PFs but lower adoption of potentially more sophisticated or tailored services. This presents an opportunity to address the seller pain point of ineffective ad promotion and unlock further revenue by guiding sellers to the premium services most likely to help them succeed.
- **Prioritization of Problems/Opportunities:** Addressing the core seller need for effective advertising service and guidance is a high-priority opportunity as it directly impacts seller satisfaction, retention, and platform revenue growth.
- **Chosen Problem/Opportunity to Address:** Implement a personalized recommendation engine for premium listing services that analyzes seller behavior and listing characteristics to suggest the most relevant and potentially effective PF available on Chợ Tốt, including the various bump and display options.

- **Solution Discovery:**

- Solution Brainstorming, Evaluation & Refinement

Based on the identified problem – that sellers struggle with listing visibility and effective promotion and require guidance – and considering the current resource constraints, various approaches for personalized recommendations were considered:

1. **Rule-Based Approach:** This involves defining manual "if-then" rules based on listing attributes and seller history.
 - *Evaluation:* While straightforward in concept, this was deemed impractical due to the vast number of parameters and complex interactions influencing listing performance and service effectiveness. Maintaining and scaling such a system for true personalization is not feasible with current resources.
2. **Popularity-Based or Simple Content-Based Filtering:** This involves recommending services based on overall popularity or simple matching of listing attributes (e.g., category) to services popular in that segment.
 - *Evaluation:* These methods are easy to implement but lack the ability to provide deep personalization based on individual seller behavior or the specific nuances of a listing's performance and potential. They don't fully address the need for tailored guidance.

3. **AI Model Approach (Initial LLM Integration):** This approach leverages the capabilities of a Large Language Model to process contextual information about a seller and listing to generate or select relevant service recommendations.
- *Evaluation:* This was selected as the **chosen initial solution** because it offers a significant step up in personalization compared to rule-based or simple filtering methods, capable of handling more complex inputs. Crucially, integrating with an existing LLM allows for a quicker implementation and testing phase that aligns with current resource constraints, unlike building a full, complex ML pipeline from scratch. If successful, this approach provides strong justification for future investment in a more dedicated and scalable ML model.

Refinement of the Chosen Solution (LLM Integration):

The chosen LLM-based approach requires specific refinement and validation steps:

- **Prompt Engineering & Refinement:** Developing and iterating on prompts that effectively provide the LLM with seller and listing context (listing title/description, category, performance data, seller history – with careful data privacy considerations) and guide it to recommend suitable premium services from the predefined list.
- **Integration & Output Management:** Building the technical layer to communicate with the LLM (via API or local deployment) and implementing logic to reliably parse and utilize the LLM's text output to map to actual available services.
- **User Experience (UX) Design:** Designing how and where these recommendations will be presented to sellers within the Chợ Tốt platform in a clear and actionable way.
- **Validation through Testing:** Conducting manual reviews of recommendations, small-scale user testing, and ultimately A/B testing to measure the real-world impact on key metrics like recommendation click-through rates and premium service conversion rates.

Feasibility and Potential Risks

Implementing the initial LLM-based recommendation system introduces specific considerations and risks:

1. Identified Potential Risks:

- **Technical Risks:**
 - **Recommendation Quality & Consistency:** Recommendations are highly dependent on prompt effectiveness and the LLM's inherent variability, risking irrelevance or occasional errors (hallucinations).
 - **Latency and Cost at Scale:** API calls to LLMs can introduce delays and become costly as usage grows.
 - **External Dependency:** Relying on a third-party LLM service introduces dependencies on their uptime, pricing, and model changes.
 - **Output Parsing Complexity:** Reliably extracting structured recommendations from the LLM's freeform text output can be challenging.
- **User Adoption Risks:**
 - **Lack of Trust:** Sellers may distrust recommendations from an opaque "AI" system, especially if explanations are limited.
 - **Irrelevant Suggestions:** Poorly performing recommendations can lead to user frustration and reduced engagement with the feature.
- **Business/Strategic Risks:**
 - **Failure to Drive Value:** The LLM-based recommendations may not effectively increase premium service adoption or improve seller success metrics.
 - **Scalability Limitations:** The LLM approach might not be the most cost-effective long-term solution compared to a fine-tuned ML model.

2. Mitigation Strategies:

- **Technical Mitigation:** Implement rigorous prompt engineering and testing. Build robust validation and filtering layers for LLM output. Monitor latency and cost closely and explore optimization techniques. Have contingency plans for external API dependency. Develop resilient parsing logic.
- **User Adoption Mitigation:** Focus on clear UI/UX design. Explore simplified ways to provide context or justification for recommendations. Conduct user testing and gather feedback early and often.

- **Business/Strategic Mitigation:** Define clear success KPIs and closely monitor them through A/B testing. Use the results of this initial phase to inform the decision and requirements for a potential future investment in a dedicated ML model. Maintain technical flexibility for future transitions.

3. Considerations:

- **Related costs:** Cost for LLM
- **Support from other Workgroups:** N/A

Objectives & Success Metrics [🔗](#)

• Specific Objectives:

- **Primary Objective:** To empower sellers on Chợ Tốt by providing personalized, data-driven recommendations for premium listing services that are most likely to help them improve their listing visibility, attract more potential buyers/applicants, and ultimately achieve their selling/recruitment goals more effectively.
- **Secondary Objective:** To increase the adoption and usage of premium listing services among sellers, particularly guiding them towards services that are best suited for their specific listing characteristics and needs, thereby driving platform revenue.

• Success Metrics (KPIs):

- **Premium Service Adoption Rate (of recommended services):** Measure the percentage of sellers who purchase a recommended premium service after seeing the recommendation. This indicates the relevance and influence of the recommendations.
 - *Current Performance:* [Insert current baseline - e.g., overall premium service purchase rate, or purchase rate of a control group not receiving recommendations if available]
 - *Expected Results:* [Insert target increase - e.g., X% increase in purchase rate for recommended services among exposed sellers]
 - **Average Number of Recommended Services Purchased per Seller:** Measure if sellers are utilizing more premium services when guided by recommendations.
 - *Current Performance:* [Insert current baseline - e.g., average premium services purchased per active seller per month]
 - *Expected Results:* [Insert target increase - e.g., Y% increase in average recommended services purchased per exposed seller per month]
 - **Listing Performance Improvement (of listings using recommended services):** Track metrics like view counts, lead count, liquidity for listings where a recommended premium service was used, compared to similar listings without recommendations or those using other services. This measures the effectiveness of the *recommended* services.
 - *Current Performance:* [Insert current baseline - e.g., average view increase after using popular premium services, or performance of listings without recommendations]
 - *Expected Results:* [Insert target improvement - e.g., Z% higher view increase or contact rate for listings using recommended services compared to benchmark]
 - **Seller Satisfaction (related to recommendations/promotion):** Gather qualitative feedback from sellers regarding the usefulness and relevance of the recommendations.
 - *Current Performance:* [Insert current baseline - e.g., general seller satisfaction scores or feedback themes on promotion difficulties]
 - *Expected Results:* [Insert target improvement - e.g., positive feedback mentions about recommendations increasing by X%, or specific satisfaction score target]
 - **Revenue from Recommended Services:** Track the direct revenue generated from purchases of premium services that were made via a recommendation.
 - *Current Performance:* 0
 - *Expected Results:* [Insert revenue target - e.g., generate \$X in revenue from recommended service purchases within the first Y months post-launch]
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User Experience and Design [🔗](#)

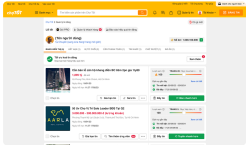
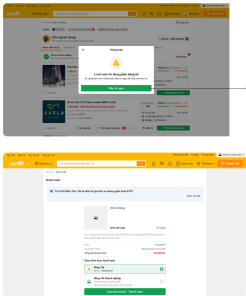
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Product Requirements [🔗](#)

Phase 1 - POC [🔗](#)

In this phase, we will validate whether the LLM model is able to process the input data and recommend the ideal PF in an acceptable timeframe with strong rationale as well as set up a baseline for service recommendation on Low Performance Ads with fixed recommendation.

Priority	Platform	Component/ Page	User Acceptance Criteria	UI
HIGH	Backend 🔗	Identify Low Performance Ads 🔗	Connect with Ad Optimization to identify low-performance ads	
HIGH		Fixed Service Recommendation 🔗	Use service recommendations from low-performance ads	
HIGH		Service Recommendation model based on LLM 🔗	<p>1. Data Context Payload: The payload sent to the LLM service for each ad must include relevant data points. For the POC, start with a defined, potentially limited, set of attributes:</p> <ul style="list-style-type: none">◦ <code>ad_attributes</code>: Key details like <code>category</code>, <code>approved_date</code>, <code>price</code>, <code>location</code>, <code>total_images</code>, <code>pf_applied_on_ad</code>, <code>pf_delivering_on_ad</code>◦ <code>ad_performance_metrics</code>: Recent performance data - <code>views</code> (total, last 7 days), <code>lead</code> (total, last 7 days)◦ <code>seller_profile_data</code>:<ul style="list-style-type: none">▪ Seller type (private/pro)▪ Total spending last month▪ PF purchased◦ <i>(Optional for POC but good to consider)</i> <code>category_benchmarks</code>: (If available) Average views/contacts for similar ads in the same category/location/age range.◦ Premium services:<ul style="list-style-type: none">▪ Bump▪ SDA▪ SA <p>2. LLM Output Requirements: The LLM service must reliably return a structured response containing:</p>	

			<ul style="list-style-type: none"> ◦ <code>recommended_service_id</code> : Identifier for the suggested service. ◦ <code>explanation_text</code> : The natural language explanation for the recommendation. ◦ (Optional for POC) <code>confidence_score</code> : A score indicating the LLM's confidence in the recommendation. <p>3. Service Mapping: A clear mapping between the <code>recommended_service_id</code> returned by the LLM and the actual services available on Chợ Tốt (including their purchase flows) must exist.</p>	
HIGH	App/Web	Low Performance Ad signal on Ad Dashboard	<ul style="list-style-type: none"> • Position: User Ad Dashboard - Tab Đang hiển thị • Low Performance Ad identified from BE will have a signal icon next to Ad View Count for indication • Clicking on the icon will open the Premium Service Recommendation popup 	
HIGH		Premium Service Recommendation popup	<ul style="list-style-type: none"> • Popup title: Thông báo • Main title: Get from Highlight text of Low Performance Ads - Ad Optimization • Description: Get from Description of Low Performance Ads - Ad Optimization • CTA button: Get from CTA button name of Low Performance Ads - Ad Optimization <ul style="list-style-type: none"> ◦ Behavior: Clicking on the button will add the recommended service to the cart of the ad and navigate to Checkout page 	
HIGH		Data tagging	<ul style="list-style-type: none"> • GA tagging for: <ul style="list-style-type: none"> ◦ Clicking on the service recommendation button in the User Ad Dashboard: https://ecs-admin.chotot.org/events/ad_opt_click_service_rec_o_ad_dashboard?app_id=chotot ◦ Clicking on the CTA button in the Premium Service Recommendation popup: https://ecs-admin.chotot.org/events/edit/ad_opt_click_service_recommendation?app_id=chotot - with page_type of Ad Dashboard (user_ad_dashboard) 	

Phase 2 - MVP

In this phase, we will publish the LLM model to Production to process service recommendation. We will compare the performance between the Control group suggesting a fixed service (Bump) and a Treatment group suggesting PF via LLM to check which approach will gain a better result and to validate if LLM can meet the expectation on time to response/ rationale provided to sellers.

Priority	Platform	Component/ Page	User Acceptance Criteria	UI
HIGH	Backend	Experiment Service Recommendation with AI	<ul style="list-style-type: none"> • A/B test on group of 10,000 sellers 	

			<ul style="list-style-type: none">Control group<ul style="list-style-type: none">Service recommendation: BumpRationale text: Lướt xem tin của bạn hiện đang giảm đáng kể. Đẩy tin là cách nhanh nhất để đưa tin trở lại đầu trang, nhận thêm tương tác.Treatment group (LLM)<ul style="list-style-type: none">Service recommendation & Rationale text will be determined by LLM model	
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Phase 3 - Enhance service recommendation & Scale up to cover all ads [↗](#)

TBU

PII Data Requirements [↗](#)

This feature does not consume PII.

Technical Requirements [↗](#)

TBU

Launch Plan [↗](#)

TBU

Learning and Next steps [↗](#)

TBU

Status and Decision Logs [↗](#)

Phase	Date	Note	Status
DISCOVERY	28 Apr 2025	Author: @Nguyen Minh Phuc Anh Content: Complete "Discovery" phase, approved by [Tag approver]	
SOLUTION		Author: @Tag yourname Content: Complete "Discovery" phase, approved by [Approver]	