

Event Condition Timeline (ECT)

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Abstract

Event Condition Timeline (ECT) is an experience mapping technique centered around a simple, MECE (mutually exclusive, comprehensively exhaustive) time model. Individual ECT models focus on a single event. ECT models can be chained together, or conditional routing conditions can be set, allowing the technique to expand understanding of flows and complex systems. Qualitative and quantitative information can be overlaid on the model. ECT can be used to model a single experience or to compare experiences. ECT can be used to understand an existing experience, prepare a future experience, or consider a competitor experience. In this paper, we describe the ECT model, discuss overlays and measurement techniques, describe experience optimization with ECT, explain how ECT can be combined with other techniques, and discuss considerations for using ECT with generative AI.

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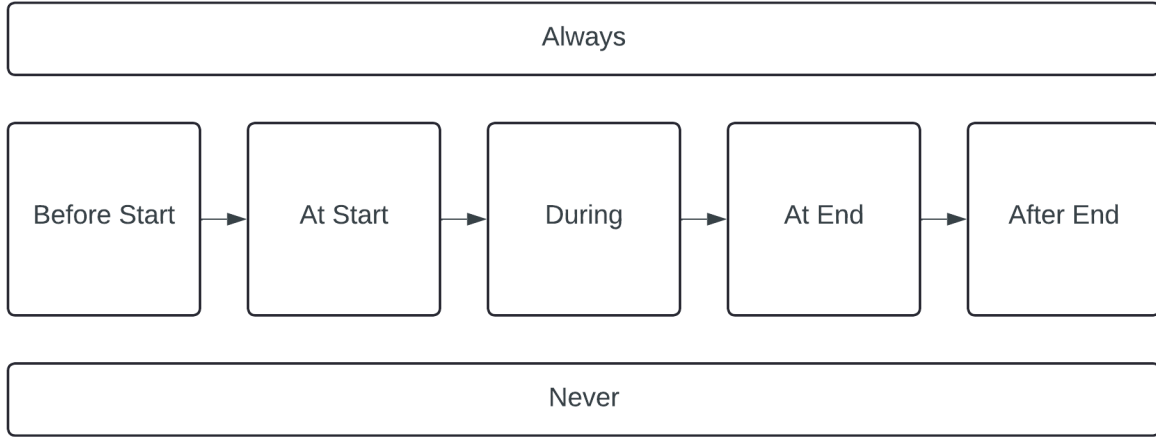
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ECT Model Basics

The ECT Model



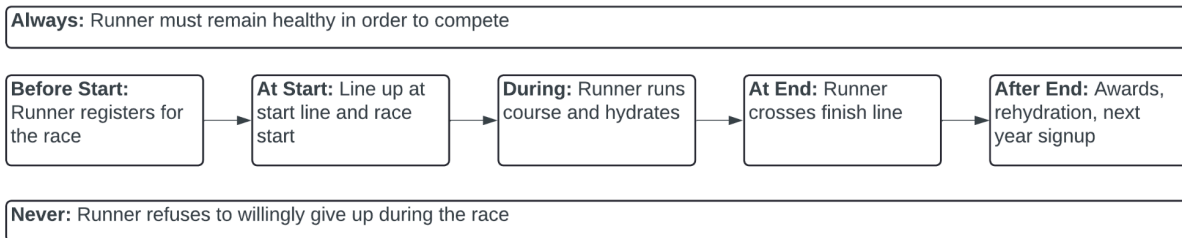
The ECT Model is a MECE model. MECE means Mutually Exclusive, Comprehensively Exhaustive. In a MECE model, categories are non-overlapping, and categories cover all possibilities. The rigid MECE structure ensures details will be placed in the same category when the same event is mapped multiple times unless behavior differs.

Above the model, a title should reference the subject we are modeling. This title typically refers to the name of an event. However, the title may also include the name of a persona, versioning information, a date, or other information that explains the distinctness of the model compared to other models.

Within this model, we consider an event that is triggered **At Start**, occurs **During**, and whose conclusion is triggered **At End**. Details related to the time before the event are **Before Start**, and after the event are **After End**. Finally, **Always** represents omni-present conditions, and **Never** represents omni-absent conditions.

ECT Example 1: Running a Marathon

A Runner Running a Marathon



Populating the ECT Model

Each ECT model focuses on one event, which may contain many actions or conditions. Details are categorized, and conditions present in multiple categories are duplicated. If a detail is in all categories, it should be moved to **Always** or **Never**.

While each ECT model focuses on one event, events can vary in scope and scale. Large events, such as the Anthropocene, can last years. The smallest events can focus on single interactions, such as a click or button press. Event scope should be selected to focus on the desired subject, and consideration should be given to the scale of information that must be analyzed and conveyed.

Any relevant information can be placed in the model. The following questions can be helpful:

1. **Before Start:**
 - a. What happened to set the stage?
 - b. What prerequisites had to be satisfied before starting?
 - c. What did the subject desire?
2. **At Start:**
 - a. What actions triggered the start?
 - b. What were the conditions at the start?
3. **During:**
 - a. What actions occurred during the event?
 - b. What changed?
4. **At End:**
 - a. What triggered the end?
 - b. What were the conditions at the end?
5. **After End:**
 - a. What was the resulting impact?
 - b. What happened next?
 - c. Was the subject satisfied?
6. **Always**
 - a. What conditions were always present from **Before Start** to **After End**?
7. **Never**
 - a. What conditions were never present **Before Start** to **After End**?

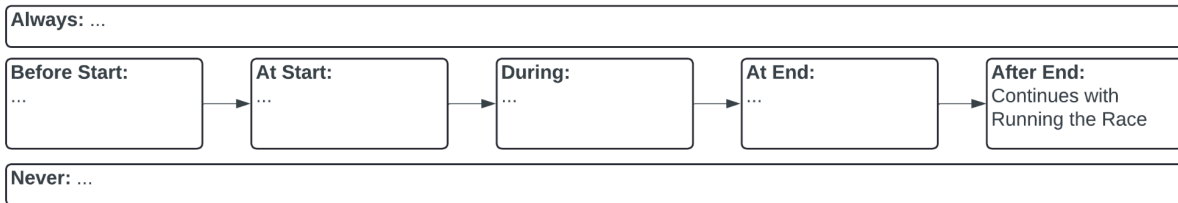
Extending ECT

ECT Chains

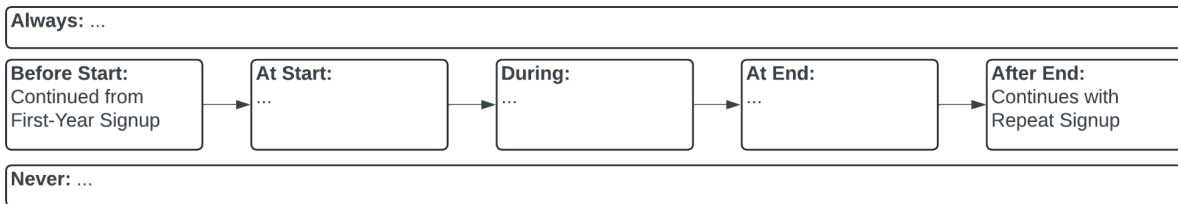
ECT models can be chained to map longer flows. Where one model ends up, the next model in the flow starts. Chains can be of any length needed for an analytic tasking. To chain ECT models:

1. In the first model, populate **At End** conditions.
2. In the second model, populate **At Start** conditions with the first model's **At End** conditions.
3. In the first model, include a statement **At End**: Continues with {second model's title}
4. In the second model, include a statement **At Start**: Continued from {first model's title}

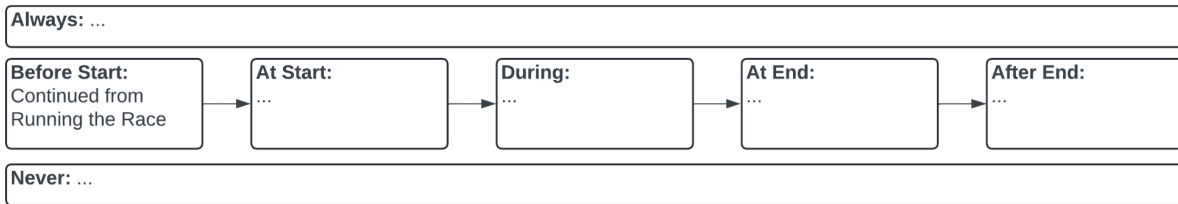
First-Year Signup



Running the Race



Repeat Signup

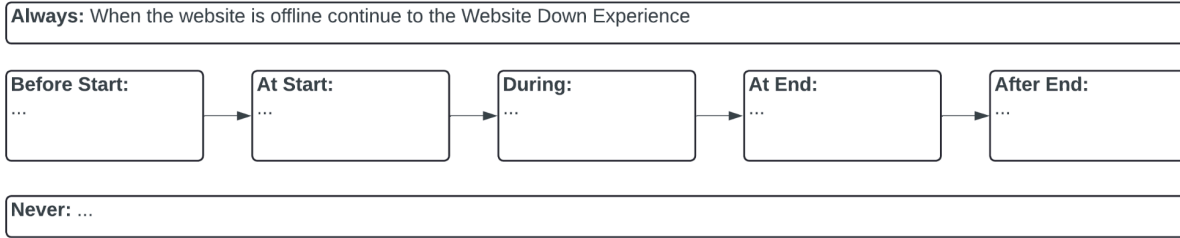


ECT Routes

ECT models can include routes to map more complex, conditional flows. Routes can be included to account for conditional behavior, failure points, and rejected constraints. To route between ECT models:

1. Determine what rule will trigger the subject to be routed to a different model.
2. In the first model, determine which category or categories will include the route.
3. In each identified category, include a statement:
When {condition} continue with {second model's title}

First-Year Signup



ECT Overlays

Existing measurements and data can be added to the model. Where data gaps exist in the model, this can indicate the presence of unknowns that add risk to the decision-making process.

Many measurement methods exist, including:

- Time duration (quantitative)
- Success rate (quantitative)
- Failure points (qualitative)
- Cognitive load (quantitative or qualitative)
- Interaction count and overhead (quantitative)
- Supports used (qualitative)
- Number of attempts (quantitative)
- Spend (quantitative)
- Physical measurements such as weight, distance, height (quantitative)
- Wait time (quantitative)
- Satisfaction (quantitative or qualitative)
- Appetite (quantitative or qualitative)
- Feedback (qualitative)
- Survey results (quantitative)
- Quality measures (quantitative or qualitative)

Find a way to measure things that matter meaningfully. Using multiple measurements can provide valuable insights and a more complete picture.

When comparing models, either for competitive analysis or to consider a possible future state, it can be helpful to include experiential measurements such as interaction measurements and cognitive load measurements.

It is easiest to measure cognitive load when working with your own systems and your actual users. One method for measuring cognitive load is NASA-TLX.

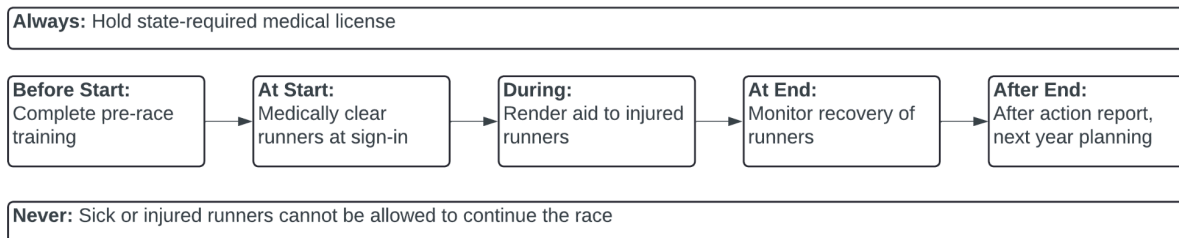
When working with a mix that includes competitor systems or evaluating interaction design enhancements, bias can be reduced using rubric-based measurement methods. One method for measuring interactions is KLM-GOMS.

ECT Use Cases

Responsibilities with ECT

ECT can be used to map event responsibilities. A persona represents a specific person who has a role. One ECT model should be used for each event and persona or role. The model can be populated with details on the person's relevant skills, actions the person must perform, and other information.

Marathon Medical Team



User Experience Inventory (UXInv) with ECT

User Experience Inventory (UXInv) is a model designed to capture, itemize, or enumerate critical information about a subject's experience. UXInv can be used for information about a user experience, a customer experience, or the experience of an ally or adversary.

UXInv does not enforce a timeline model of its own. ECT could be used together with UXInv:

- To define detail for each ECT category,
- To summarize the scoped event, or
- To summarize a flow with ECT chains.

UXInv is available from <https://zerotrack.net/>

Optimizing with ECT

Where ECT is a time-based model that considers flow, the following questions can help identify opportunities for improvement:

1. Is measurement performed throughout the flow, or are there essential unknowns?
2. How often is the desired outcome being achieved?
3. What are known and potential failure points?
 - a. What failure points should route to alternative models?
 - b. What failure points can be mitigated by setting appropriate **Before Start** prerequisites?
 - c. What failure points can be mitigated by setting **Always** or **Never** conditions?
4. Where the critical path is blocked, can blocking activities be pushed later in the process, or can non-essential activities or conditions be eliminated?
5. Where critical activities can be performed earlier, is there sufficient activity support to achieve a successful outcome faster?
6. When shifting activities earlier or later, how can the augmented user behavior be tested and measured?
7. What is the experience of people not served by the model?
8. What is the anticipated competitive response to the model?

Working with Generative AI

ECT can be used electronically, on paper, on a whiteboard, or with generative AI.

AI is not one thing. It is dozens of technologies evolving with new versions, behavior, and underlying data. It is non-deterministic and can generate different outputs when given the same inputs. It may comply with its instructions. It may be firewalled from external data, refreshed periodically, or continuously accessing new information. It may contain biases within its weighting of information. It may produce viable and non-viable results, and it may not be possible to determine which we have been provided.

Prompt: Form an ECT for a shopping event. Consider that registration and login could occur at any point in the process. Consider that the company will want to follow-up with the customer to ensure satisfaction. Consider that this is a brand new company and is getting 100% of its customers via promotion.

Response from ChatGPT o1-preview 2024-09-25:

<p>Event Condition Timeline (ECT) Model</p> <p>Title: Customer Shopping Experience at a Brand-New Company (First-Time Customers via Promotion)</p> <hr/> <p>Before Start:</p> <ul style="list-style-type: none">- Promotion Received: Customers receive promotional material from the company (e.g., email, social media ad).- Brand Awareness: Customers have not heard of the company before; this is their first interaction.- Interest Sparked: The promotional offer interests customers, prompting consideration of a purchase.- Prerequisites:<ul style="list-style-type: none">- Customers have internet access and a compatible device (computer, smartphone, tablet).- Customers possess a valid payment method (credit/debit card, PayPal, etc.). <hr/> <p>At Start:</p> <ul style="list-style-type: none">- Website Entry: Customers click on the promotional link and arrive at the company's website.- Initial Conditions:<ul style="list-style-type: none">- Customers are first-time visitors.- Customers are not logged in or registered.- Welcome Experience: The website displays a welcome message highlighting the promotional offer.- Trigger Action: Clicking the promotional link initiates the shopping event. <hr/> <p>During:</p>

- **Product Browsing:**
 - Customers explore product categories and listings.
 - View product details, images, prices, and customer reviews (if available).
- **Registration/Login Option:**
 - **At Any Point:** Customers may choose to register or log in.
 - **Registration:**
 - Provide personal information (name, email, password).
 - Receive a confirmation email or message.
 - **Login:**
 - Enter existing credentials if previously registered.
- **Shopping Cart Actions:**
 - Add desired products to the shopping cart.
 - Adjust quantities or remove items as needed.
- **Customer Support:**
 - Access live chat, FAQs, or contact forms for assistance.
- **Checkout Process:**
 - Proceed to checkout when ready.
 - Enter shipping information.
 - Choose shipping options.
 - Enter billing information.
 - Review order summary for accuracy.
- **Payment:**
 - Select preferred payment method.
 - Enter payment details securely.
 - Confirm and authorize payment.
- **Possible Routes:**
 - **Cart Abandonment:**
 - If customers leave items in the cart without purchasing, they may receive reminder emails (if contact information is provided).
 - **Payment Issues:**
 - If a payment fails, customers can try an alternative method or contact support.
 - **Continued Browsing:**
 - After adding items to the cart, customers may return to browsing for more products.

At End:

- **Purchase Completion:**
 - Payment is successfully processed.
 - An order confirmation page is displayed.

- **Confirmation:**
 - Customers receive an order confirmation email with details and receipt.
 - **Final Conditions:**
 - Customers may now have an account if they registered during the process.
 - Order details are saved in the customer's account (if registered) and the company's order management system.
 - **Trigger Action:** Clicking "Place Order" or "Confirm Purchase" finalizes the transaction.
 - **Possible Routes:**
 - **Failed Transaction:**
 - If the purchase fails, customers are prompted to retry or contact customer support.
-

After End:

- **Order Processing:**
 - The company begins order fulfillment (picking, packing, shipping).
 - **Shipping Notification:**
 - Customers receive an email with shipping details and tracking information.
 - **Product Delivery:**
 - The product is delivered to the customer's specified address.
 - **Follow-Up:**
 - The company sends a satisfaction survey or feedback request.
 - Offers assistance for any issues or concerns with the purchase.
 - **Customer Engagement:**
 - Customers may leave reviews or ratings for the products.
 - Receive future promotional offers or newsletters (with consent).
 - **Building Loyalty:**
 - The company may offer incentives for future purchases (discount codes, loyalty points).
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Always:

- **Website Accessibility:** The website remains operational and user-friendly throughout the process.
 - **Security Measures:**
 - All transactions are secured with encryption (SSL certificates).
 - Customer data is protected per privacy policies.
 - **Customer Support Availability:** Assistance is accessible at all times via chat, email, or phone.
 - **Commitment to Quality:** The company strives to provide excellent products and customer service.
 - **Data Analytics:** The company collects anonymized data to improve the shopping experience.
-

Never:

- **Data Misuse:** The company never shares or sells customer personal information without explicit consent.
 - **Hidden Fees:** No unexpected charges are added during checkout.
 - **Security Compromise:** The company never neglects security protocols that protect customer data.
 - **Mandatory Registration:** Customers are never forced to register or log in to make a purchase.
 - **False Advertising:** Products are never misrepresented; all information provided is accurate.
-

Notes and Considerations:

- **Registration/Login Flexibility:**
 - Customers have the option to register or log in at any point, including before browsing, during product selection, or at checkout.
 - Guest checkout is available for those who prefer not to register.
 - **Promotional Dependence:**
 - As a new company relying entirely on promotions, all customer entry points begin with promotional material.
 - **Customer Satisfaction Focus:**
 - Post-purchase follow-up is crucial for building trust and loyalty.
 - Feedback mechanisms are in place to address any issues promptly.
 - **Experience Optimization:**
 - The company monitors key metrics (e.g., cart abandonment rates, page loading times) to continuously improve the shopping experience.
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By structuring the shopping event using the ECT model, we've mapped out each stage of the customer's experience, ensuring all aspects are considered:

- **Flexibility in Registration/Login:** Acknowledged throughout the process, allowing customers control over when they choose to provide personal information.
- **Follow-Up for Satisfaction:** Embedded in the After End phase to build relationships and gather valuable feedback.
- **Promotion-Driven Entry Point:** Emphasized in the Before Start phase, reflecting the company's current marketing strategy.

This comprehensive mapping facilitates a clear understanding of the customer journey, identifying potential touchpoints for enhancing satisfaction and addressing any obstacles that may arise.

Suggested Resources

- NASA-TLX (Task Load Index), <https://humansystems.arc.nasa.gov/groups/TLX/>
- KLM-GOMS, <https://www.usabilitybok.org/klm-goms>
- “Measuring ITSM: Measuring, Reporting, and Modeling the IT Service Management Metrics that Matter Most to IT Senior Executives”, Steinberg
- “How to Make Sense of Any Mess”, Covert

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The canonical home for information about Event Condition Timeline is <https://zerotrack.net/>

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