# Generative AI Insights

Spring 2023 Accelerator

COMCAST NBCUNIVERSAL | LIFTLabs

**SETTING THE STAGE**

# GEN AI INSIGHTS OVERVIEW

## Why Generative AI?

Gen AI appears set to outpace the paradigm shifts of mobile and cloud computing to become **table stakes** for enterprises seeking to serve the best products, services, and experiences, cost effectively and at scale.

## The Accelerator

The LIFT Labs Generative AI accelerator selected **eight startups** to partner with business units at Comcast to **rapidly test** a wide range of use cases for Gen AI and large language models within the organization.

## Insights & Case Studies

This presentation seeks to **highlight insights** driven throughout the process of identifying and collaborating with emerging startups in the space, and showcased through select **case studies focused on** early experimentation and uncovering value.

## What's Next

We build on these early insights with a series of deep dives into rapid innovation and enterprise implications of generative AI. These will function as **predictions** of where generative AI is heading, and outline **forward-looking, high-impact opportunities** for enterprises to best capitalize on this technological shift.

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**THE ACCELERATOR**

## LIFT Labs Accelerator 2.0: Harnessing startup innovation through rapid experimentation and strategic partnerships

**A revamped accelerator that taps into deep partnerships throughout the startup ecosystem** and is differentiated from other corporate accelerators by a hyperfocus on business development, pilots and proof of concepts

**The best of LIFT Labs Accelerator + LIFToff** that attracts cutting-edge, market-validated, and enterprise-ready startups into a structured program aimed at aligning Comcast business units on rapid experimentation

**Multi-touchpoint programs prioritize employee** engagement while meeting startups where they are to best capitalize on the opportunities that collaboration offers

Theme-Based

Focused Six-Week Program

No Equity Required

Broader Corporate Connections

Strategic Partnerships

# The Accelerator enabled rapid testing using Gen AI to drive four main categories of learnings
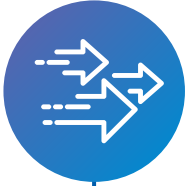
## Enhance Productivity & Drive Speed

Pilots launched during the Accelerator helped Comcast business units test how generative AI could **boost productivity** by automating resource-intensive tasks and **increasing the speed** of product development.

## Optimize Data

The Accelerator enabled opportunities to **optimize Comcast's use of data**, unlocking unrealized value in unstructured and qualitative data like image, video and written customer feedback.

## Create New Capabilities

Collaborating with startups focused on specific use-cases and Gen AI applications enabled business units **to discover and test emergent new capabilities** that would have been impossible or prohibitively expensive without AI.

## Provide Focus

The ability of LLMs to process, summarize and draw insights from large quantities of data drove experimentation on how to leverage AI to **provide focus** and to discern key signals from the noise of data.

# THE ACCELERATOR
## The Spring 2023 Cohort: A diverse solution set across use cases and stages

| Customer / Employee Experience | Entertainment | Analytics |
|---|---|---|

### Monterey

**Monterey AI** helps teams to instantly transform millions of data into actionable product insights.
**Current Projects:**
Pilots across customer and employee insights teams

### nlx

**NLX** enables enterprises to create personalized voice, chat, and multimodal conversations, all in one place.
**Current Projects:**
Significant pilot underway with CX team

### Rephrase.ai

**Rephrase.ai** is a text-to-video generation platform which makes video creation as simple as writing text.
**Current Projects:**
Live customer trial in Q3 2023 with broader scope under discussion

### charisma.ai

**Charisma.ai** powers interactive characters for interactive stories, entertainment and education.
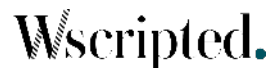**Current Projects:**
Pilot proposal with Universal Destinations and Experiences; ongoing discussions with Sky

### inworld

**Inworld AI** is a creative platform for building AI-driven virtual characters.
**Current Projects:**
Initial POC complete with Universal Film and Ent Group; next phase being scoped

### Wscripted.

**WScripted is** an AI assistant for creative professionals which accelerates the discovery of writers and content.
**Current Projects:**
Customer discovery work with Universal Film and Ent Group; paused due to strike

### COACTIVE

**Coactive** unlocks analytics and insights from images and videos.
**Current Projects:**
Pilot underway with Media Analytics Framework team

### Reality Defender

**Reality Defender** provides realtime deepfake detection across all media types.
**Current Projects:**
Pilot underway with NBC News

### Full Portfolio HERE

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# THE ACCELERATOR
## Delivering value, inspiration and opportunity to business leaders

### Mala Khurana
**Exec Dir, CX Product Architect TPX Emerging Experiences**

Comcast has been exploring a lot of genuine AI capabilities to see how we can leverage some of those capabilities to **accelerate our roadmaps**. When LIFT Labs started focusing on Gen AI companies, we were super excited to see how we can get in there and try to use some of the work that these companies have done to **elevate the work that we've already been doing**.

### BJ Daisey
**SVP, Emerging Experiences and Channel Operations, Comcast**

By working with startups through the LIFT Labs Accelerator, **my team sees the potential to accelerate quarters, if not years, of our roadmap**. Being part of the last Accelerator was one of the highlights of my career.

### Jan Neumann
**Vice President, Machine Learning, Comcast**

I'm very **inspired by the founders** and their passion for building something new. Immersing yourself in their work environment grants permission to tap into their passion and **take some of their creativity back to my team and innovate at Comcast**.

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# Insights across 4 key categories highlight Gen AI's potential enterprise impact

| Category | Description | How It's Playing Out |
|---|---|---|
| **Data** | Organization-wide **data strategy** that enables ML/AI development **is a prerequisite** for enterprises seeking to implement Gen AI initiatives at scale. | **Over half** of Fortune 1000 C-level tech leaders highlighted deficiencies in data infrastructure, data security and data governance as **hinderances for building Gen AI capabilities.** |
| **Infrastructure** | The emerging software categories of MLOps and AI-as-a-Service allow enterprises to more easily **bridge the resource gap** between raw data and customer-facing generative AI applications. | From specialized tools like Pinecone, LangChain and Chroma to bundled end-to-end solutions from companies like Amazon's AWS, Oracle and Snowflake, **tooling is emerging to help enterprises extend limited ML capabilities** in building Gen AI-powered software. |
| **Productivity** | Gen AI will function as the copilot **for supercharged productivity for workers** by automating time-intensive, low value tasks and lowering technological thresholds for software development. | Knowledge workers are seeing the **time-saving benefits of Gen AI tools** and are rapidly taking advantage by testing them out – officially or unofficially. **Three out of five workers** currently use or plan to use Gen AI, but many (over 60%) are concerned about navigating data and security risks. |
| **Products** | Multimodal Gen AI marks a generational shift into a **new user interface paradigm** with implications for how users interact with both software and hardware. | Early players are **deploying multimodal Gen AI across their interfaces** to optimize UI and increase interactivity between users and computers. Windows GPT-4-based Copilot (currently in beta) allows users to operate their PC using NLP commands, and InsureTech startup Lemonade briefly turned its entire website into an LLM-powered chatbot. |

**INSIGHTS**

# Data is the fuel that powers Generative AI

## Learnings

In testing offerings by accelerator companies – implications are clear:

- **Cohesive, top-down data strategy** that fosters **hygienic data pipelines** is essential for effective Gen AI development
- ML models powering Gen AI products **are only as effective as the data they are trained on**
- Data and its role in applied machine learning will grow more central as AI continues to evolve

### Near Term Next Steps

- Address the **organizational, governance, and technological challenges** associated with AI

- Develop a generative AI-enabling, **top-down, organization-wide architecture** for collecting, securing the rights to, ingesting, storing, harmonizing, cleaning, and pre-processing data

- Experiment with solutions that democratize data access with software that focuses on bringing data closer to end user production usage

### Ecosystem Opportunities

- Develop **two-way compensation and licensing frameworks** for both IP rights holders and Gen AI model developers

- Assess Comcast NBCUniversal's exposure to **uncompensated data scraping** of IP and outline a plan for securing compensation

**Startups like Monterey.ai and Coactive fast-track the structuring and organization of complex, disparate data sets and sources**

# CASE STUDIES

## Coactive & Monterey bring structure to unstructured data, unlocking valuable insights and giving existing data sets new applications

### About:

Coactive and Monterey both develop tools for structuring unstructured data and generating insights from previously unsearchable image, video and qualitative information.

Their solutions use AI and natural language processing (NLP) to manipulate qualitative data with the same precision as a structured spreadsheet; and infuse unstructured data with new dimensions and functionalities.

### Use Cases:

Both startups are working with Comcast teams to label, organize and analyze visual data and customer feedback.

Coactive is working with Sky production teams to use natural language to automatically identify and surface relevant clips from hundreds of hours of video without the need for any prior human cataloguing. Monterey is providing customer service teams with the ability to analyze qualitative data like app store reviews and social media posts with NLP, before leveraging AI to draw out insights and triage the outputs to the relevant internal teams.

### Business Impact:

These tools enable teams to optimize data to provide new capabilities, enhance productivity, and support a better customer understanding.
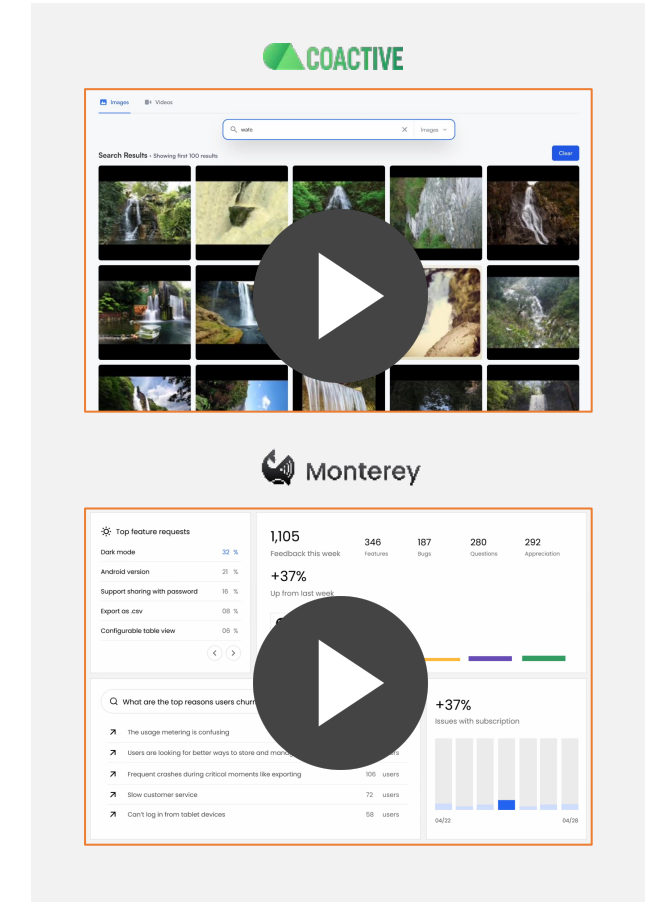
**INSIGHTS**

## The cloud-based software category AI-as-a-Service reduces the technical threshold to enterprises building Gen AI solutions

### Learnings

- A suite of specialized software is required **to turn raw data** into **Gen AI-powered products**

- This tech stack, collectively known as MLOps assists in **automating the entire machine learning development process**

- The emerging AI-as-a-Service software category bundles MLOps features into single product suites effectively **reduces both the cost and technical thresholds** for enterprises to the develop ML models, LLMs and Gen AI-powered applications

| Near Term Next Steps | Ecosystem Opportunities |
|---|---|
| • Assess **existing ML development capabilities** to determine if custom development, MLOps tooling or AI-as-a-Service are the most appropriate, as well understanding **where in the AI tech stack** a given enterprise is equipped to enter. | • Opportunity to leverage **both startups and legacy cloud computing providers** like AWS's Bedrock which are rolling out end-to-end, cloud-based software suites that bundle the MLOps workflow into one-stop products. |
| • **Emphasize use cases related to MLOps** in the upcoming LIFT Labs Accelerator and select startups for the cohort that provide AI-as-a-Service to test and learn, with the goal of closing strategic capability gaps. | • Test and invest in solutions that make **current and future compute expenditure more efficient** by optimizing inference, extracting more utility from less powerful hardware, and investing in compute innovation like decentralization and new chip architectures. |
| • Identify customer pain points within the business where increased ML capabilities and Gen AI-driven **solutions provide disproportionate benefits** (e.g., billing) and design pilots focused on testing related solution | • Develop and test smaller, purpose-built LLMs and ML models trained on proprietary, first party data and **designed for Comcast-specific use cases.** |

**The solution provided by accelerator cohort member NLX reduced technical thresholds for building AI applications, accelerating capacity to deliver customer experiences at scale**

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**CASE STUDIES**

## NLX creates no-code, easily-deployable chatbot experiences, providing automated and personalized customer interactions

### About:

NLX's no-code, conversational AI solution delivers automated and personalized real-time customer service journeys. The company's product incorporates LLM technology to build interactive customer experiences across text, phone, and video channels.

### Use Cases:

NLX partnered with the Xfinity Emerging Experiences team to rapidly pilot a personalized, omnichannel, and generative AI-powered customer service experience that addresses a service issue before leveraging customer data to facilitate both an upsell and post-purchase support.

### Business Impact:

NLX's no-code, quick-deploy solution enabled the Xfinity Emerging Experiences team to rapidly design and launch a unified, enhanced customer experience, proving its use in providing new capabilities, increasing data value and customer understanding.

**INSIGHTS**

## Gen AI will be the copilot for supercharged productivity within enterprises by augmenting and simplifying employee workflows

### Learnings

- Gen AI deployment in the workplace has the potential to **optimize workflows** by allowing workers to offload time-intensive and/or low-value tasks, rapidly brainstorm new ideas and extract non-intuitive insights from large bodies of text and data.

- Workers today are still learning how to best use Gen AI in their daily work, with **levels of knowledge and usage varying widely** across industries and organizations.

| Near Term Next Steps | Ecosystem Opportunities |
|---|---|
| • Identify business-critical areas where Gen AI-powered productivity tooling is best positioned to **drive the greatest productivity gains.**<br><br>• Promote role-specific tools and services, with licenses and training, to boost buy-in – with the **potential to deliver exponential increases in productivity.**<br><br>• Experiment with empowering non-technical employees to develop **purpose-built apps** through no-code AI software development tools | • **Develop and roll out a robust Gen AI policy** with increased applications across the business to prevent abuse, misuse and minimize the risk of data leaks.<br><br>• Explore role-specific AI tooling oriented to **resource-intensive employee workflows.** |

**Startups like Wscripted are providing turnkey, effective solutions to increase speed, efficiency and cost savings for labor-intensive segments of the enterprise**

## CASE STUDIES

# Wscripted reduces time for producers to process scripted content by 10x, massively boosting productivity

**About:**

Media production staff take an average of 60 -90 minutes to read a screenplay and 3.5 hours to read a book. Wscripted's technology tackles this pain point by ingesting, processing and analyzing screenplays and books, leveraging natural language processing and Gen AI to generate two-page summaries for media production staff to review in a fraction of the time versus traditional methods.
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**Use Cases:**

Wscripted is partnering with NBCUniversal to develop AI technology that will help media production studios rapidly surface and process scripted content.

**Business Impact**:

This use case of NLP and Gen AI has the ability to increase speed, efficiency and costs savings for content-heavy segments of the enterprise, enhancing productivity and increasing employee engagement.
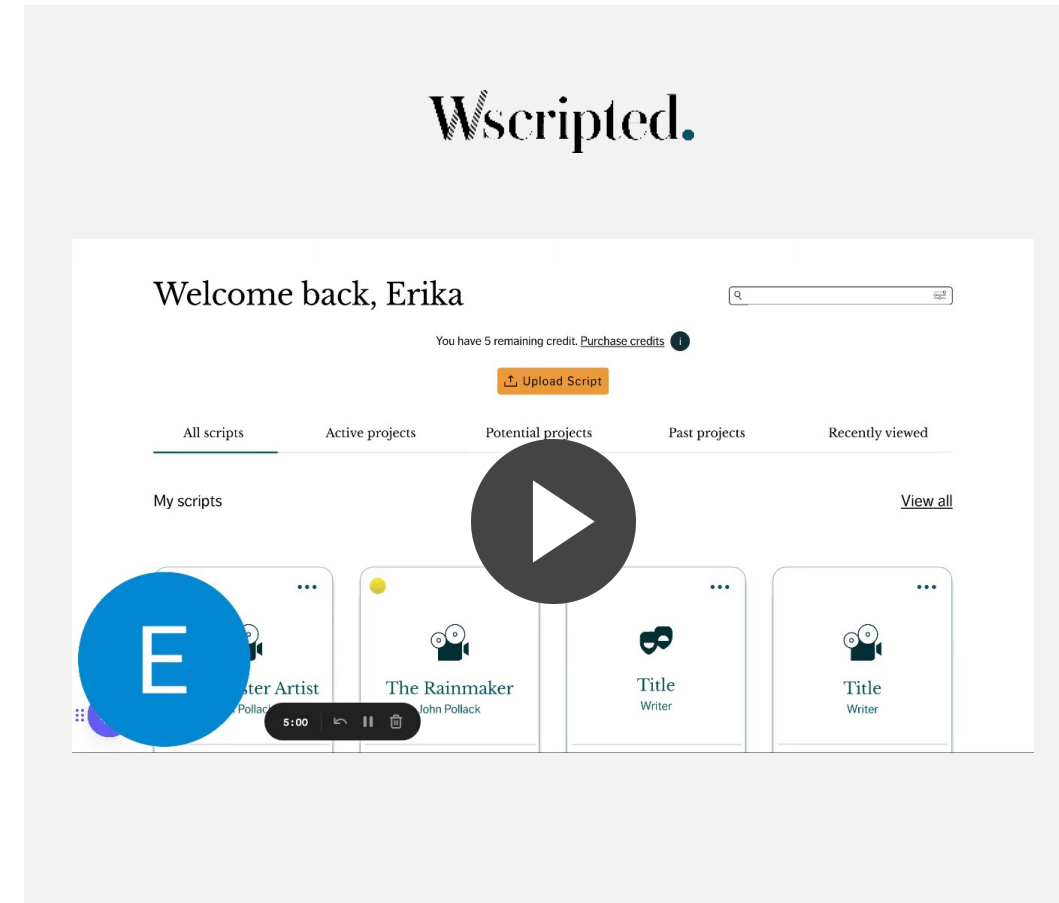
## INSIGHTS

# Rapid tech advancements enable enriched customer interactions, products and tools

## Learnings

- Advances in Gen AI, computer vision, natural language processing (NLP), and increasing AI capabilities at the edge present the opportunity to **revolutionize the way consumers interact** with technology and content.
- While the primary input into Gen AI tools to date has been text, rapidly advancing machine learning models increasingly allow for **diverse inputs such as voice and image.**
- In the same way that the Xfinity Voice Remote optimized users' interactions with their TVs, Gen AI presents an opportunity to **revolutionize the user interface paradigm** for all manner of software and connected hardware.

### Near Term Next Steps

- Leverage natural language processing and Gen AI to **optimize sales funnels** by autonomously offering customers customized packages and pricing.

- Open a **wider range of functionality** through more supportable intents in software (Xfinity TV), hardware (Xfinity routers) and IoT (Sky Live, Xfinity Home).

### Ecosystem Opportunities

- The evolution of NLP and multimodal AI will drive **rich customer interactions** in which users will have enhanced access points (e.g., a chatbot suggesting a solution based on an uploaded image of a malfunctioning router or a streaming search engine comprehending nuanced natural language requests).

- **Build proprietary tooling for Comcast enterprise customers** (e.g., Comcast Business, Comcast Advertising, Effectv, NBC, etc.) to use Gen AI to develop marketing assets and offer Gen AI-powered product solutions to their end users.

**Pilots with accelerator startups Charisma.ai, Inworld and Rephrase showcased the ability for Gen AI to deliver high-value, personalized customer experiences**

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# CASE STUDIES

## Charisma.ai, Inworld and Rephrase build generative, interactive, digital experiences

### About:

Charisma.ai and Inworld provide platforms for building generative, interactive, digital experiences. Rephrase.ai is a text-to-video generation platform that eliminates the complexity of video production.

### Use Cases:

Charisma.ai and Inworld are partnering with NBCU to provide personalized generative entertainment products in which users can interact with characters from NBCU-owned IP in tailored, real-time, natural language conversations.

Rephrase.ai collaborated with NLX in the Xfinity Emerging Experiences customer service pilot. Their solution provided a personalized end point for the customer service experience by deploying AI-generated hyper-realistic Xfinity technician avatars and audio for the post-purchase portion of the customer journey.
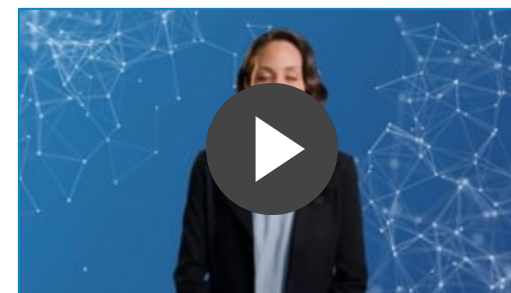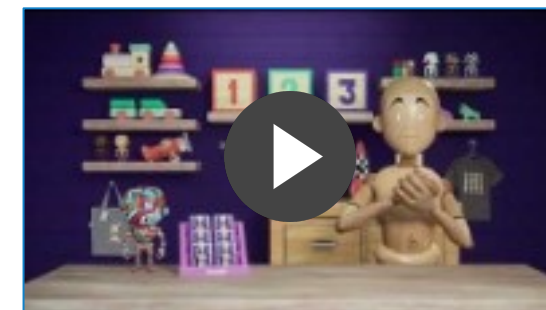
### Business Impact:

These use cases delivered high-value touchpoints and experiences to consumers, enabling a premiumization of key services. They also increased speed, efficiency and have the potential of closing technological capability gaps.

charisma.ai

inworld

Rephrase.ai

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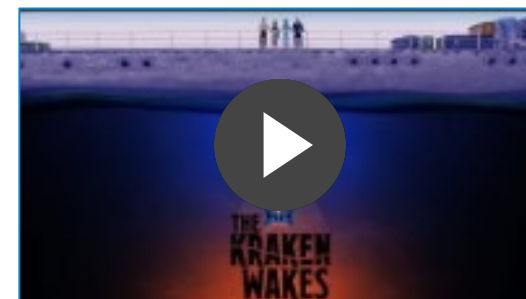
# The Accelerator allows the enterprise to keep pace with rapid changes in AI technology

The LIFT Labs Generative AI Accelerator surfaced clear learnings and key opportunities for Gen AI to drive enterprise innovation

**Data is the fuel that powers Gen AI**

Data architecture and strategy that facilitates the benefits and expanding use cases of Gen AI will set Comcast up for success both short and long term.

**Emerging tooling is bringing down barriers to entry**

MLOps and AI-as-a-Service tools are enabling enterprises to build out their own ML capabilities. A directed effort to identify, test and build in high-impact areas can be an immediate unlock.

**Gen AI has the potential to deliver exponential increases in productivity**

With proper roll-out and guardrails, Gen AI tools can serve as a copilot to employees, saving time and adding value to workflows.

**Rapid tech advancements enable richer customer interactions, products and tools**

The breadth, depth and quality of interactive and personalized experiences continues to increase, providing numerous opportunities across the enterprise.

**The next LIFT Labs Accelerator (Fall 2023), focused on Enterprise AI, will continue to facilitate critical test and learn opportunities, bringing meaningful insights to CMCSA**