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GPT vs GDP, the Impact of Generative Pre-trained Transformer on Global Economy and Workforce.

Instructor: Professor Kris Singh

CONTENTS

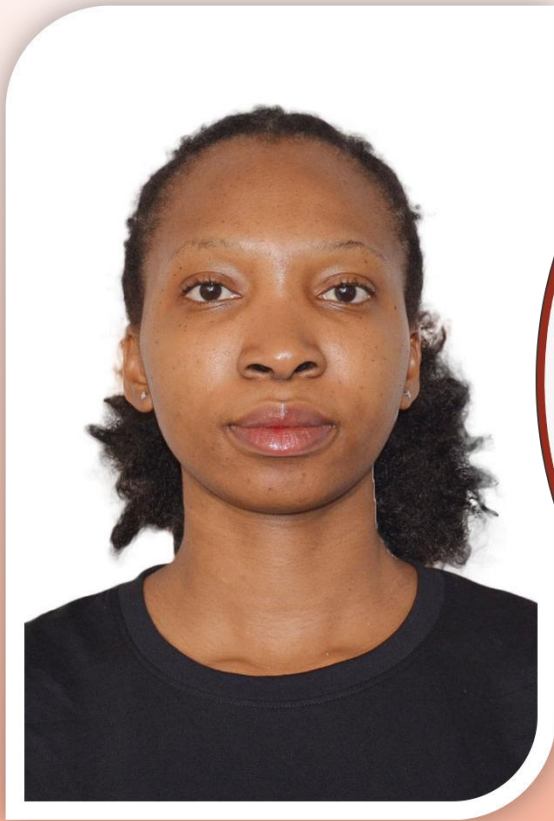| Patience Ndidiamaka Agbo	Mahin Mashud	Diana M Garkpeh
Economics Development student at UCASS	International Economics student at UNIST	Enterprise Management student at Hohai University
Team Leader	Core Member	Core Member

Introduction

❑ Economic crises led to uncertain labor markets, widening disparities between developed and emerging economies.

❑ The emergence of innovative technologies brings about opportunities for job creation in fields that require human judgment, creativity, and communication skills.

❑ The widespread adoption of GPT (Generative Pre-trained Transformer) models, such as ChatGPT, presents significant ethical challenges.

World Economy to Return to Pre-Pandemic Output in 2021

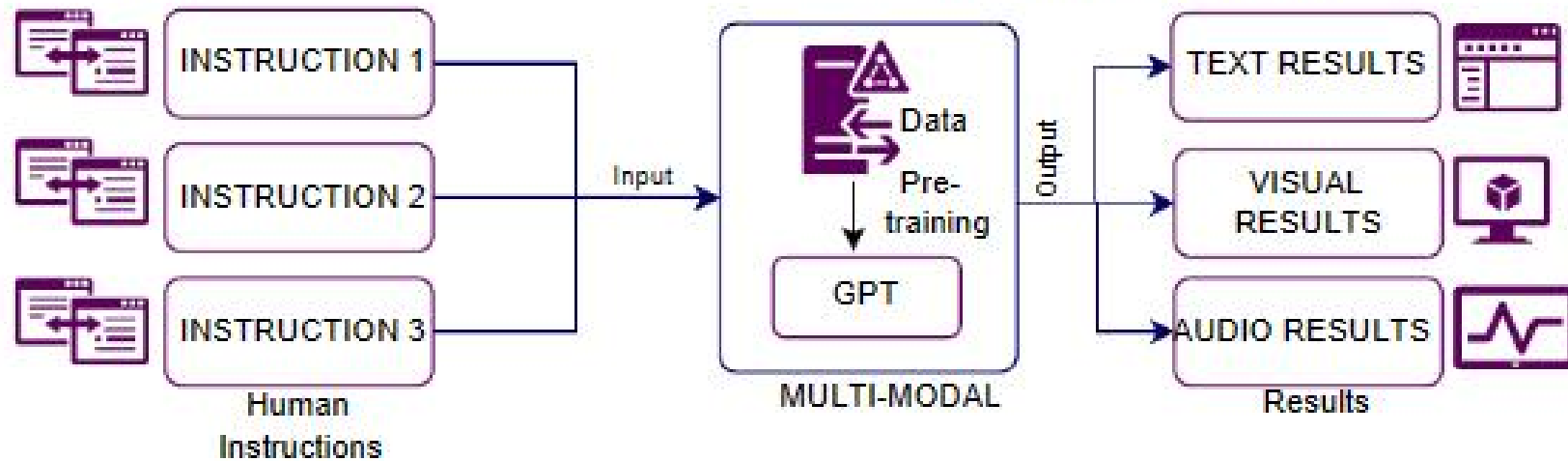Global GDP projections made in November 2019 and March 2021, Index: Q4 2019=100

- November 2019 projection
- March 2021 projection
- Upside scenario
- Downside scenario
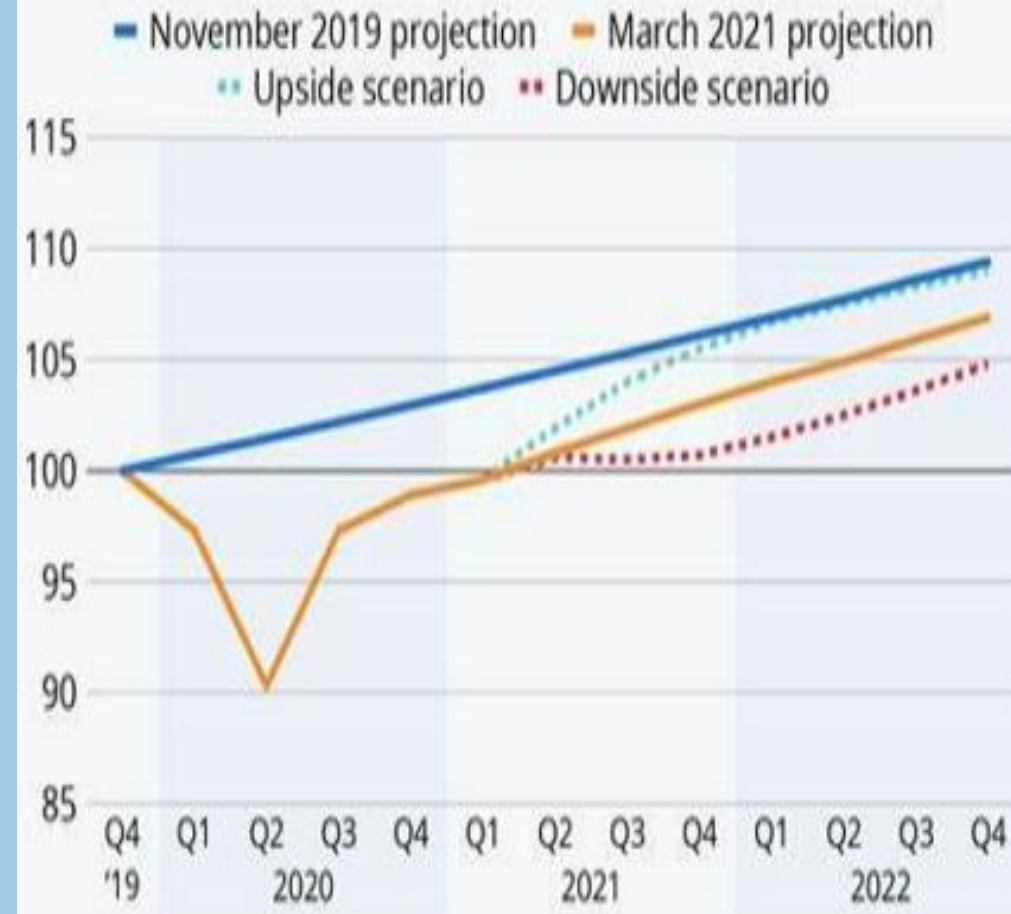
Source: OECD

UNIMODAL (CHATGPT)

HUMAN INSTRUCTION — Input → GPT — Data Pre-training — Output → TEXT RESULTS

CROSS MODAL(STABLE DIFFUSION 2.1)

HUMAN INSTRUCTION — Input → GPT — Data Pre-training — Output → VISUAL RESULTS

INSTRUCTION 1
INSTRUCTION 2
INSTRUCTION 3

Human Instructions

Input → MULTI-MODAL — Data Pre-training — GPT — Output →

TEXT RESULTS
VISUAL RESULTS
AUDIO RESULTS

Results

# 3 applications of generative AI in financial services

Conversational finance

Generative AI chatbots and voice assistants can perform financial tasks and transactions directed by customers, such as checking account balances, making payments, scheduling transfers, and even giving financial advice.

Financial analysis

Generative AI assistants can analyze financial data and information at scale through large language models to produce insights, recommended strategies, and compare against benchmarks.
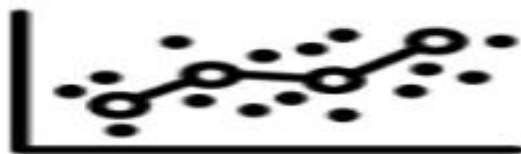
Synthetic data generation

Synthetic training data produced by generative AI can inform and improve financial models and ensure compliance with data privacy regulations.

Project concerns

- How has GPT technology influenced the global economy sectors like in terms of productivity, efficiency, and innovation?

- What are the socio-economic impacts of GPT adoption on job roles, skill requirements, and workforce structure, across different countries and regions?

- What policies are being put in place to handle any issues with job displacement and skill mismatches, views on the incorporation of GPT into workforce practices?
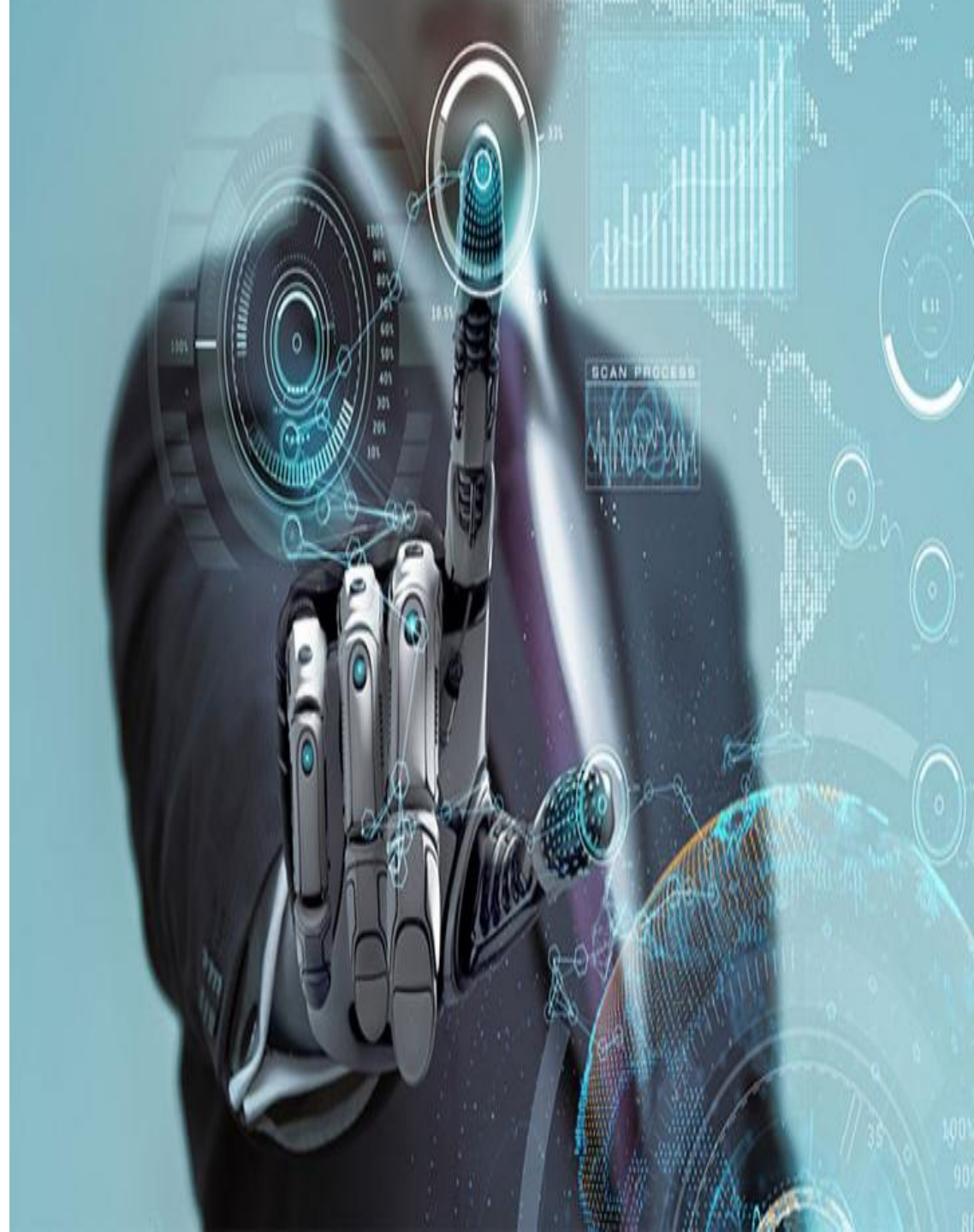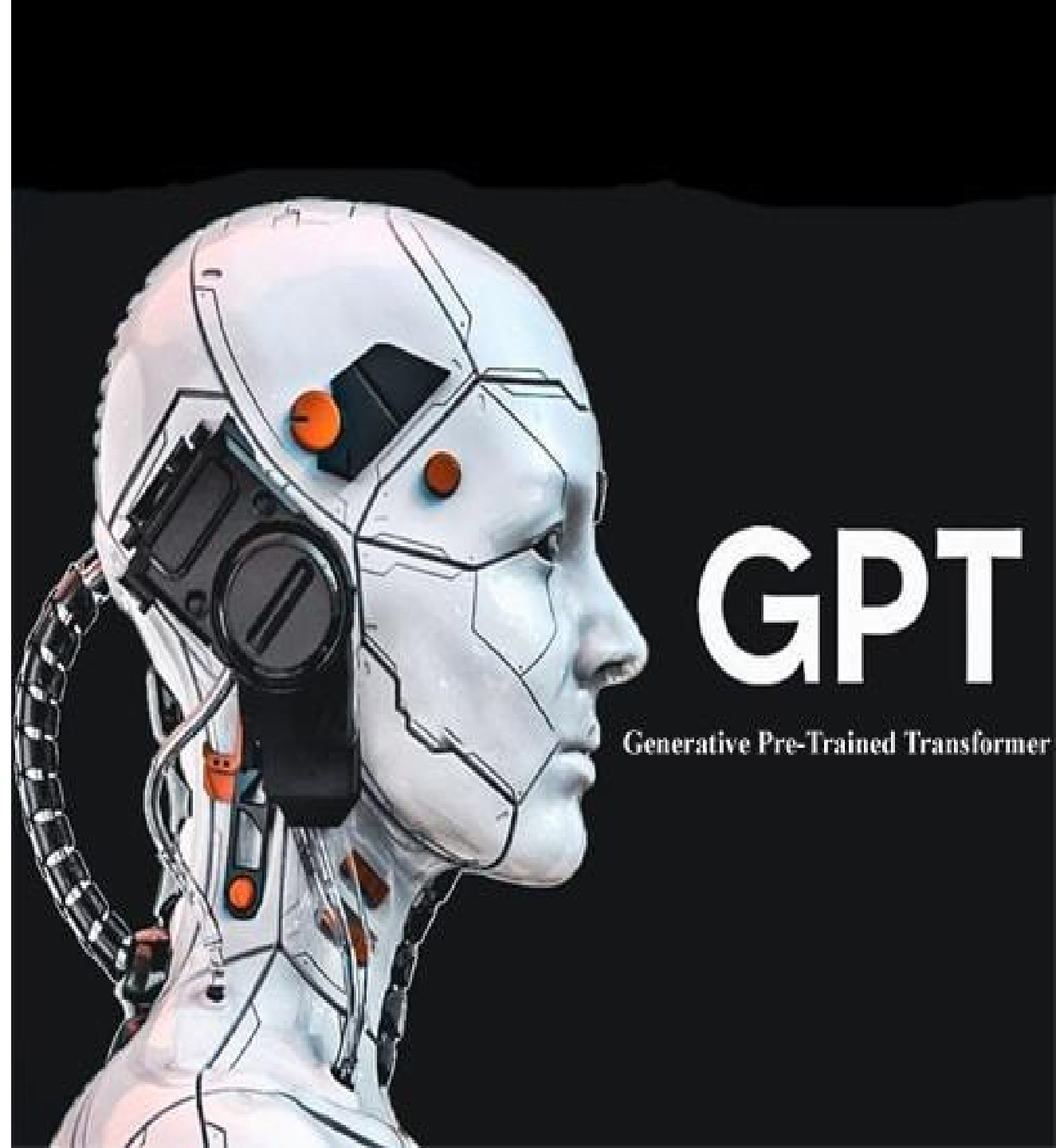
AI Impact on Future Jobs

World Economic Bank estimates that by 2022, 42 percent of the core skills within roles will likely change

42%

By 2030, more than 1 billion people, about one-third of the jobs worldwide, could be impacted by the technology revolution
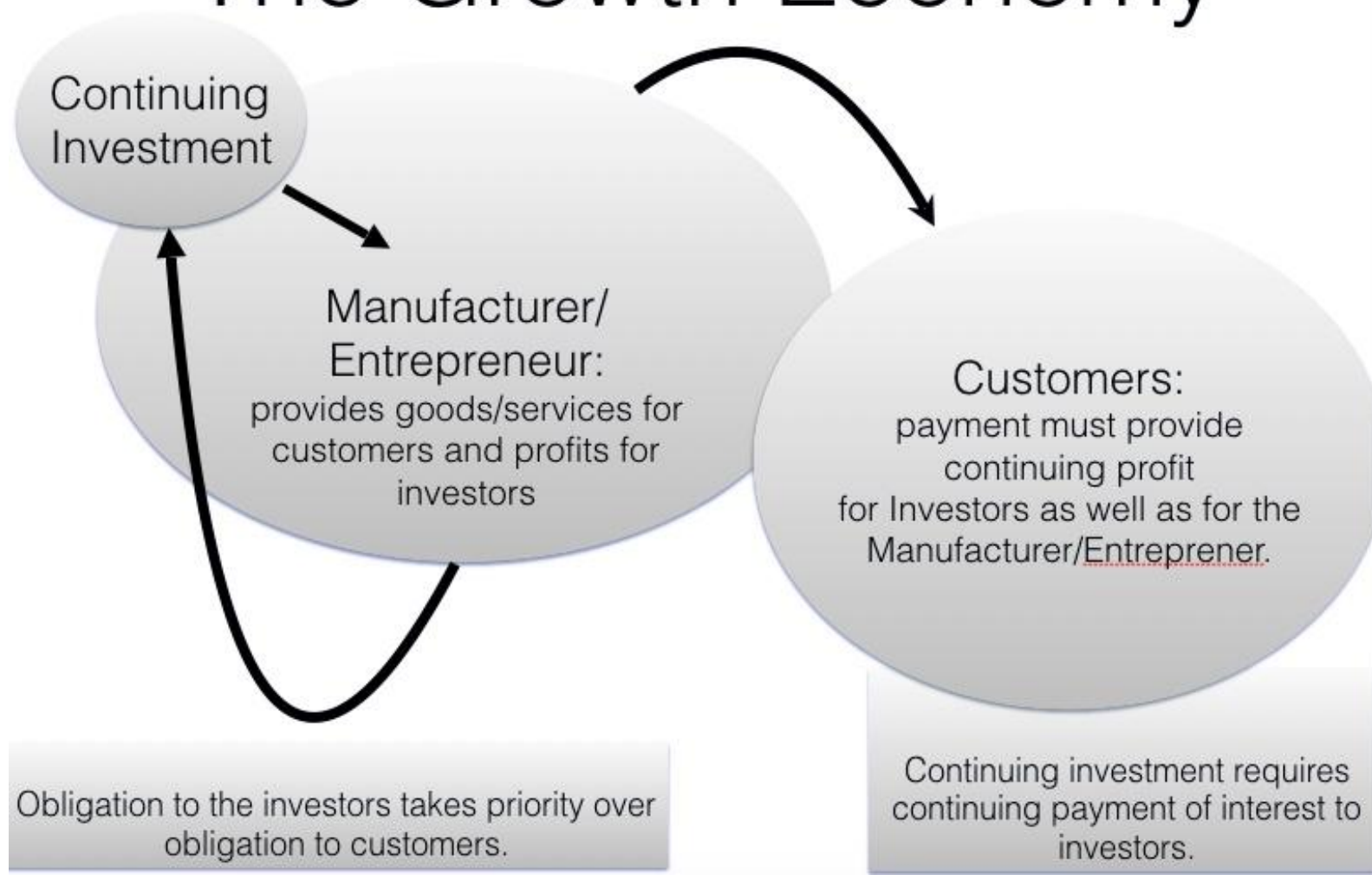
Methods

- Economic Modeling
- Case Studies
- Scenario Analysis
- Labor Market Analysis

Findings

The Growth Economy

Continuing Investment

Manufacturer/Entrepreneur: provides goods/services for customers and profits for investors

Customers: payment must provide continuing profit for Investors as well as for the Manufacturer/Entreprener.

Obligation to the investors takes priority over obligation to customers.

Continuing investment requires continuing payment of interest to investors.

Economic Implications of GPT

- Sentiment analysis
- Trading strategies
- Risk prediction and management

GPT-3, the next Revolution in Artificial Intelligence

Findings cont.

- Businesses can benefit from faster decision-making, increased innovation, and gaining a competitive edge through the use of GPT's **cognitive velocity**. Individuals can also benefit from enhanced personal efficiency, continuous learning, and collaborative intelligence.

Pre–training

Training data → Training process → Generative pre–trained model
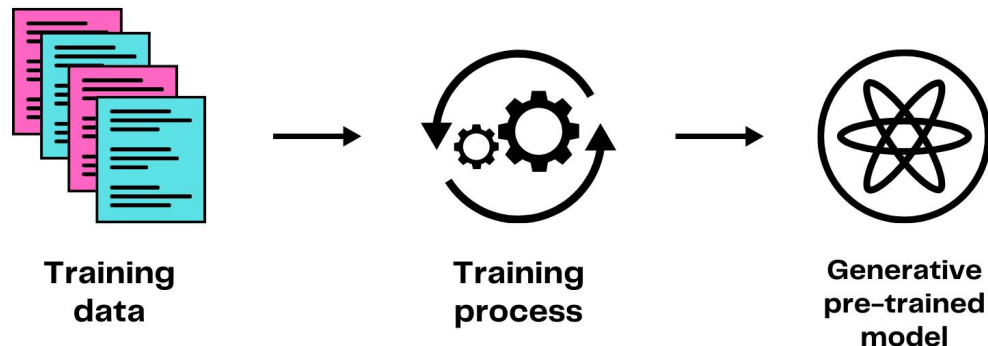
Innovation and Competitive Advantage of GPT

- enhance understanding of customer behavior and resulting in higher ROI
- Technology has automated routine tasks, freeing up human resources for more complex and creative endeavors. This shift has led to an increase in **productivity**, a key driver of economic growth.
- GPT fosters divergent thinking and exploration of new ideas.

Challenges

- Demand significant computational re-sources to t and deploy

- Though GPTs are capable of producing precise predictions they can be challenging to interpret

- GPT in finance sector can be vulnerable to adversarial atta

- Requires large amounts of training data to achieve high accuracy

Solutions

- Implement some cloud services to enhance fraud detection,
- better portfolio management decisions, and increased efficiency
- Effective and secure deployment of these models
- Skill development.

GPT – From training to output

Policies

- Policies such as progressive taxation on AI-benefiting firms and enforcing anti-trust policies, mitigates income inequality arising from AI advancements. Investing in comprehensive reskilling and up skilling programs