

December 5, 2023

## **Dentsu and TOPPAN Holdings Conduct World's First Pilot Test Using Photorealistic Avatars as Web3 Wallet UIs**

Dentsu\*<sup>1</sup> (TYO: 4324) and TOPPAN Holdings (TYO: 7911) are collaborating with companies and universities\*<sup>2</sup> such as ODK Solutions Company, Ltd. and Sony Corporation to conduct a pilot test starting December 11 to test photorealistic avatars that precisely reproduce owner appearance and speech as interactive user interfaces (UI) for Web3 wallets, which function as storage for digital assets. The experiment will also automatically extract incentives that can be exercised based upon a users' ownership of non-fungible tokens (NFTs) and will provide wallet owners with guidance on how to use those incentives using natural-sounding dialogue.

This pilot test will be the world's first example of an interactive UI made as physically close to human as possible being used to exchange information for a wallet capable of storing inorganic digital assets.



Conceptual image of a Web3 wallet with photorealistic avatar UI

### **<Background>**

People around the world are becoming more conscious of protecting their personal information, so greater limitations are being put on third-party cookies and other marketing tools, and companies are having to build systems and other infrastructure to manage the personal data they need to continue their marketing activities. For this reason, there is a growing need for Web3 wallets that can be used anywhere, as they use the technologies harnessed in NFTs – which digitalize identity, individual interests, and other information similar to that stored in cookies – and allow consumers to own their personal data. With the development of such decentralized information management technologies, companies will no longer need to manage personal data in-house, and will be able to engage in marketing activities with the consent of consumers while simultaneously protecting personal data.

Meanwhile, from the consumer's perspective, Web3 wallets can store information about all of a user's activities as NFTs, from educational history to volunteer experience, and they can thereby

be linked to NFTs when needed. The various incentives granted to them can comprise an enormous amount of information, so the challenge lies in the effort required to search, select, and request the incentives that are of the greatest benefit to each consumer.

In order to tackle these challenges, TOPPAN Holdings and dentsu will expand the scope of the Updemy™\*3 pilot test being conducted among students at Kindai University by dentsu and ODK Solutions, while simultaneously incorporating the photorealistic avatars and UI technologies honed by TOPPAN Holdings, in order to explore how to improve the convenience of Web3 wallets.

Photorealistic avatars of the students will allow the companies to examine the technological progress and potential of the market for avatar UIs, which could support students in the medium to long term as lifelong companions by displaying and helping them exercise their incentive rights when needed, based upon a thorough understanding of the NFTs they own.

## <Summary of the pilot test>

Period: December 11, 2023 to March 31, 2024

Location: Data will be acquired at Kindai University and verified at the Open University of Japan

Objectives:

- 1) Build a system that performs identity analysis for proven NFTs
- 2) Verify the market potential of photorealistic avatars and UI technologies and services
- 3) Verify differences in user reactions when using a UI with a photorealistic avatar of the user and a UI with an avatar that resembles a third party

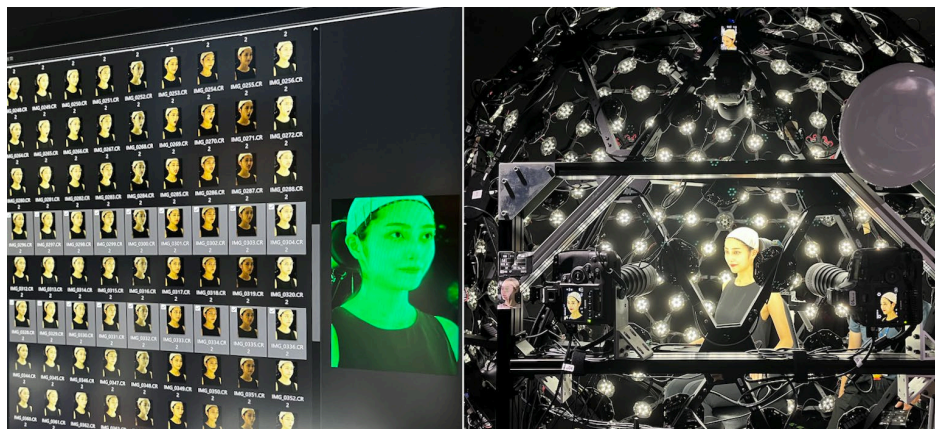
## <Roles of each company>

dentsu:

- Analyze NFT ownership portfolios for each wallet.
- Provide insights on token analysis that identifies tokens by linking them with information about the identity of the owner.

TOPPAN Holdings:

- Create photorealistic avatars (using a Light Stage\*4 and MetaClone™\*5) and provide technologies needed to produce expressions during conversation.
- Provide an avatar UI of a different person, and compare and analyze the content of conversations students have with the avatar, their reactions to it, and their responses to incentives offered by it with the same data gathered when the students use an avatar with their own appearance.



Creating a photorealistic avatar UI on a Light Stage (Model: Rumika Fukuda)

## <Future>

Going forward, dentsu and TOPPAN Holdings will work with research companies to harness the findings of the pilot test to standardize procedures for future blockchain<sup>\*6</sup> deployment. They also plan to publish use case proposals and test results in various media.

TOPPAN Holdings will continue to improve its expressive technologies that allow photorealistic avatars to serve as reliable interfaces for dialogue, as it strives to create solutions that connect together wallets, dialogue engines, and other peripheral technologies.

Dentsu will harness the results of the pilot test to develop services and solutions with higher added value and thereby help client companies grow their businesses and contribute to solving issues facing society.

\*1: This pilot test will be conducted by Dentsu Innovation Initiative (DII), a Dentsu Group organization that drives R&D throughout the entire Group. DII has collaborated with Dentsu Inc., Information Services International-Dentsu, Ltd., and Septeni Incubate, Inc. to form the web3 club™, a group-wide organization that is researching and implementing new business in the Web3 field. See the following press release for more information about the launch of web3 club™.

Press release: <https://www.group.dentsu.com/en/news/release/000805.html>

\*2: For this pilot test, ODK Solutions will analyze data on NFT ownership and will provide the service that allows for responses in natural language, while Sony Corporation will provide the smart card hardware wallet. The other companies and organizations collaborating in this experiment are: Sivira Inc., Onplanetz Co., Ltd., 3rd Gear Inc., Septeni Incubate, Inc., the Kawahara Laboratory at the Open University of Japan, and the Iwami Laboratory of the Faculty of Economics and Business Administration at Wako University.

\*3: Updemy™ is a Web3 service jointly developed by Dentsu Group and ODK Solutions that harnesses NFTs to add value to the individual's experience and support individual growth. See the following press release (Japanese only) for more information about Updemy. Updemy is a registered trademark of ODK Solutions Company, Ltd.

Press release: <https://www.group.dentsu.com/jp/news/release/000894.html> (Japanese only)

\*4: The Light Stage technologies were developed at the University of Southern California and are capable of

highly-accurate facial captures.

\*5: MetaClone™ is a TOPPAN Inc. service that automatically generates photorealistic 3D avatars from a single photograph for use by companies that develop and operate online services in 3D virtual metaverses.

\*6: Blockchain technologies are built upon the concept of decentralized networks that synchronize data records on nodes scattered around the world. Such technologies are well-suited to the construction of networks that make it difficult to destroy or tamper with programs or data, and make it easier to share and jointly manage data and rights information between multiple business entities.

## About dentsu

Dentsu is the network designed for what's next, helping clients predict and plan for disruptive future opportunities in the sustainable economy. Taking a people-centered approach to business transformation, dentsu combines Japanese innovation with a diverse, global perspective to drive client growth and to shape society.

<https://www.dentsu.com/>

<https://www.group.dentsu.com/en/>

## About the TOPPAN Group

Established in Tokyo in 1900, the TOPPAN Group is a leading and diversified global provider committed to delivering sustainable, integrated solutions in fields including printing, communications, security, packaging, décor materials, electronics, and digital transformation. The TOPPAN Group's global team of more than 50,000 employees offers optimal solutions enabled by industry-leading expertise and technologies to address the diverse challenges of every business sector and society and contribute to the achievement of shared sustainability goals.

<https://www.holdings.toppan.com/en/>

<https://www.linkedin.com/company/toppan/>

\*The names of products and services mentioned in this press release are trademarks or registered trademarks of their respective companies.

\*The information in this press release is current as of the time of publication. All details are subject to change without prior notice.

#####

## Media Inquiries :

Group Corporate Communications Office

Dentsu Group Inc.

Email : [group-cc@dentsu-group.com](mailto:group-cc@dentsu-group.com)