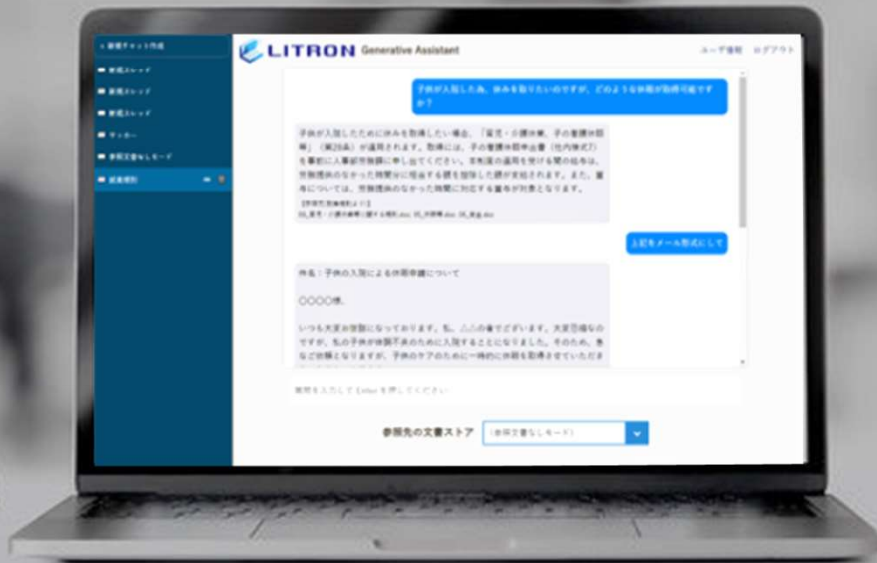


情報種別：秘密（関係者限り）
会社名：NTTデータ
情報所有者：DT本部
デジタルサクセスコンサルティングユニット

Advancement of investigation tasks in drug discovery research through the utilization of generative AI.



Presenter



Life science X IT

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NTT DATA Japan Corporation
Consultant

INTRODUCTION TO NTT DATA

NTT DATA is the 6th-leading IT Service company in the world.
We work with our customers to innovate.
NTT DATA is part of the NTT Group.

+190,000
professionals

6th

leading company in the IT Service*

\$27

billion in total
revenue

+56

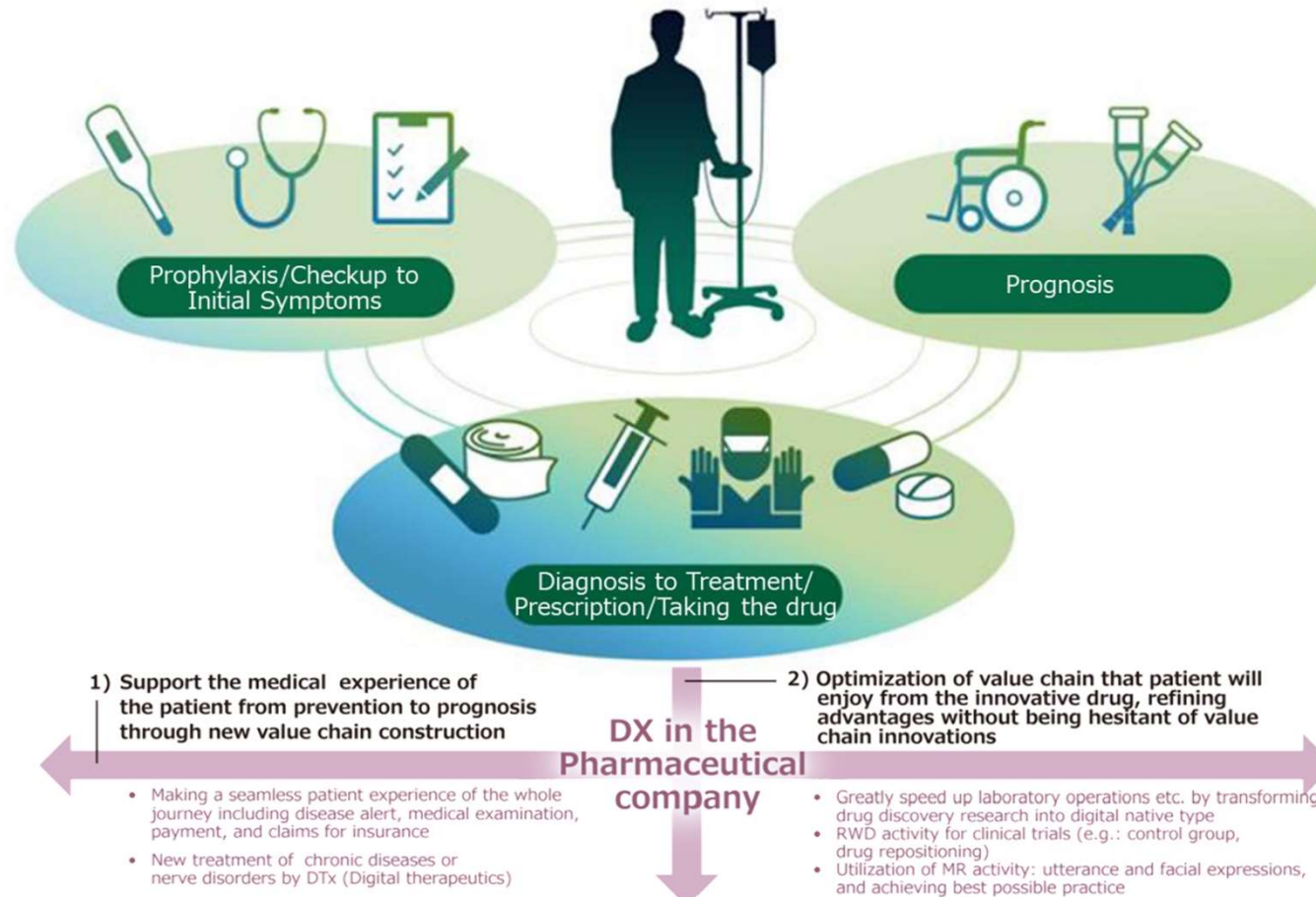
countries where we
operate

* Gartner, "Market Share: IT Services, Worldwide 2020",
Dean Blackmore, et. al, published on April 8, 2021

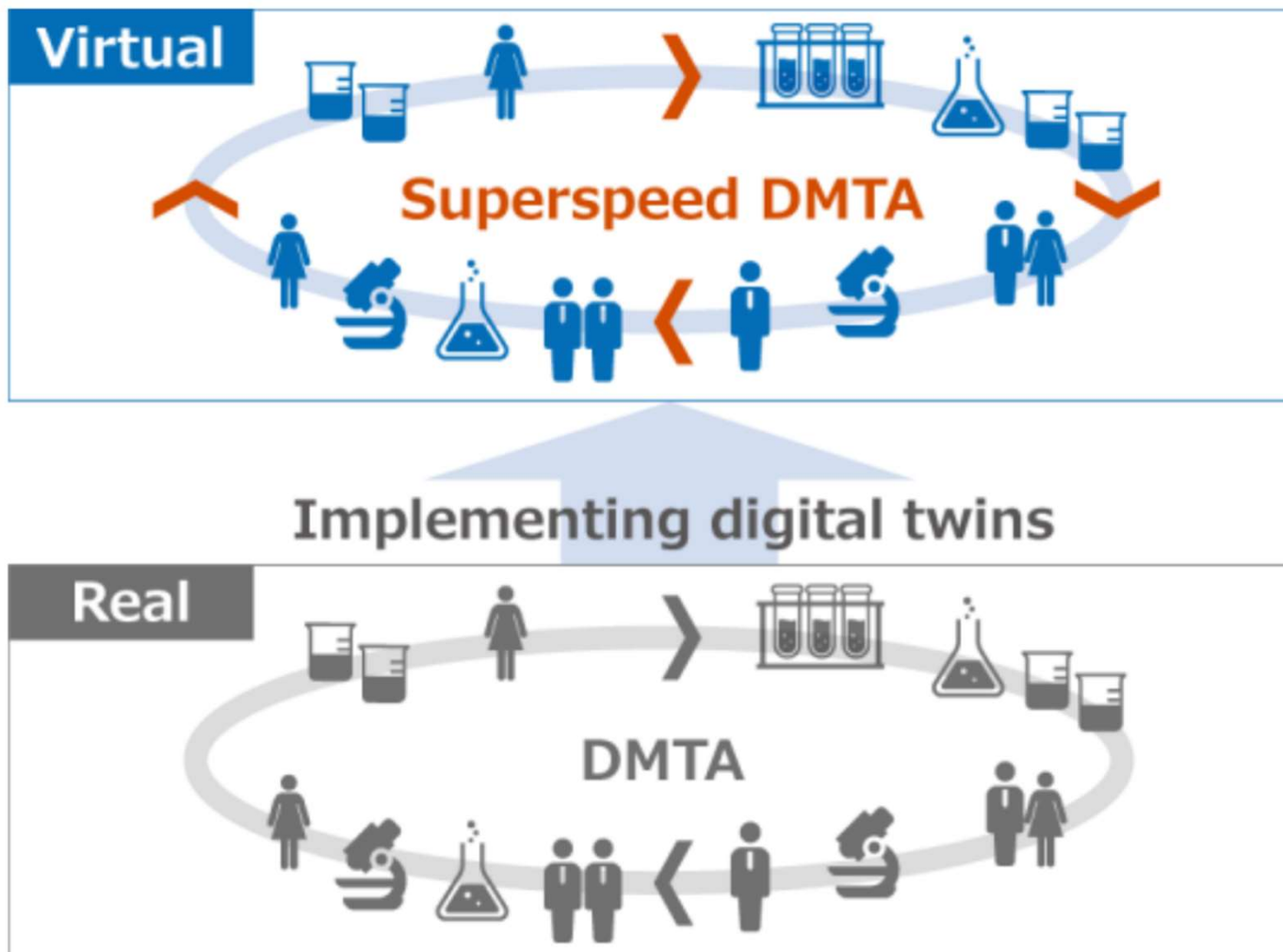
DATA AS MARCH OF 2022

Vision

Medical Experience **MX** Transformation of Patient-Centered Medical Experience through DX

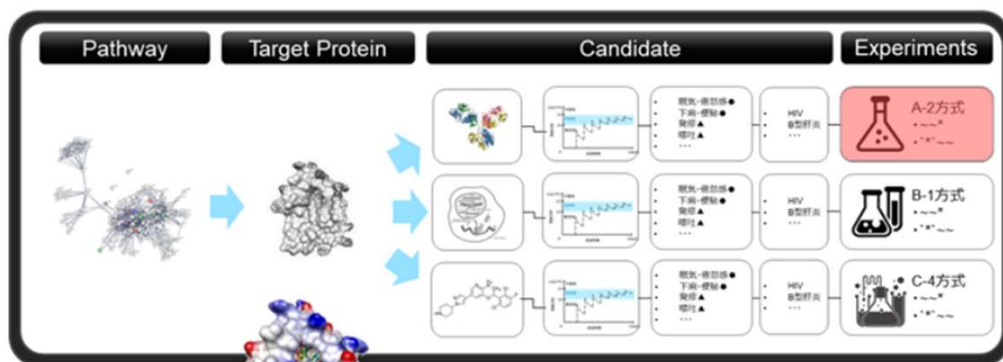


Future Outlook

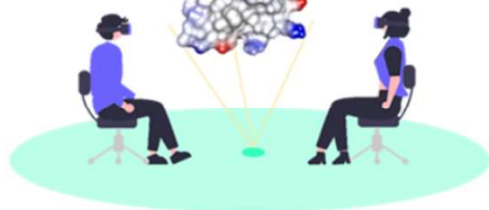


Benefits of the Future Outlook

Highly accurate and consistent simulations throughout target search, compound candidates, and pharmacological activity/safety
 ⇒ **Improved drug discovery research success rate through collaboration and mutual assistance between AI and researchers**



AI determines the optimal experimental design and parameters and the laboratory equipment runs automatically
 ⇒ Drug discovery activities without human intervention (existing diseases/modalities)

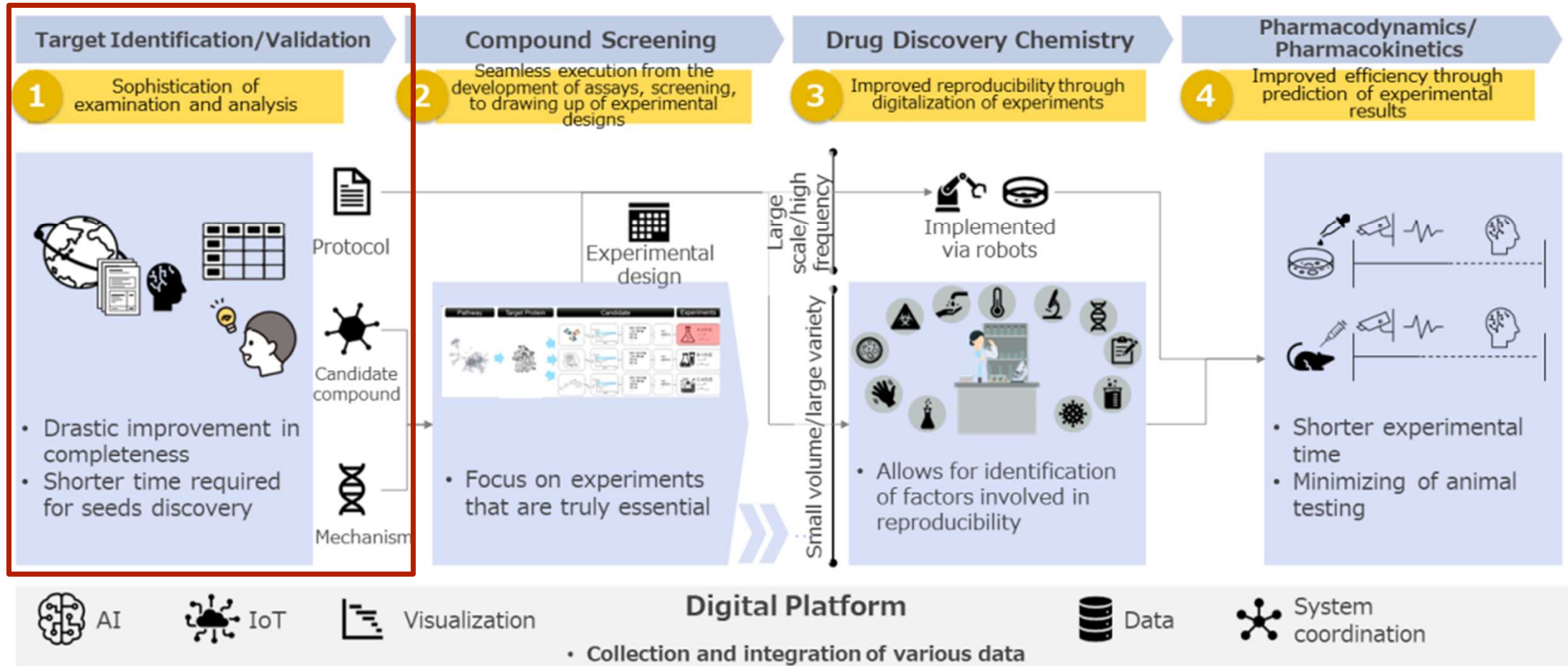


3D projection and analysis of protein/compound structures
 Virtual discussions across different levels



Existing modalities can be left up to AI/automated experimental devices so that researchers can focus on studying new diseases, building hypotheses, and developing modalities

First Step



What is Advanced Research?

Until now

- Internal and external resources were separately searched by **manually** entering keywords
- ↓
- The user had to **read, extract, examine, and judge** the necessary information from just a limited range of information

From now on

	評価系	試薬X	リガント	反応性
論文A	A	5 mg	Type 1	30%
論文B	B	10 mg	Type 2	70%
論文C	A	5 mg	Type 3	90%
...

- The **system** extracts the values for the specified items from all existing resources
- ↓
- Provides tables with just the information you need
- You no longer have to read journal articles and extract information**

試薬Xの作用

試薬Xの濃度	反応性
0 mg	~3.5
5 mg	~4.5
10 mg	~5.5
15 mg	~6.5

- The **system** extracts the values for the specified items from all existing resources **+ analyzes and provides suggestions**
- ↓
- Intuitive visualization of the necessary information in graphs
- No need for making extra examinations, improves the quality and judgement speed**

Solution Overview

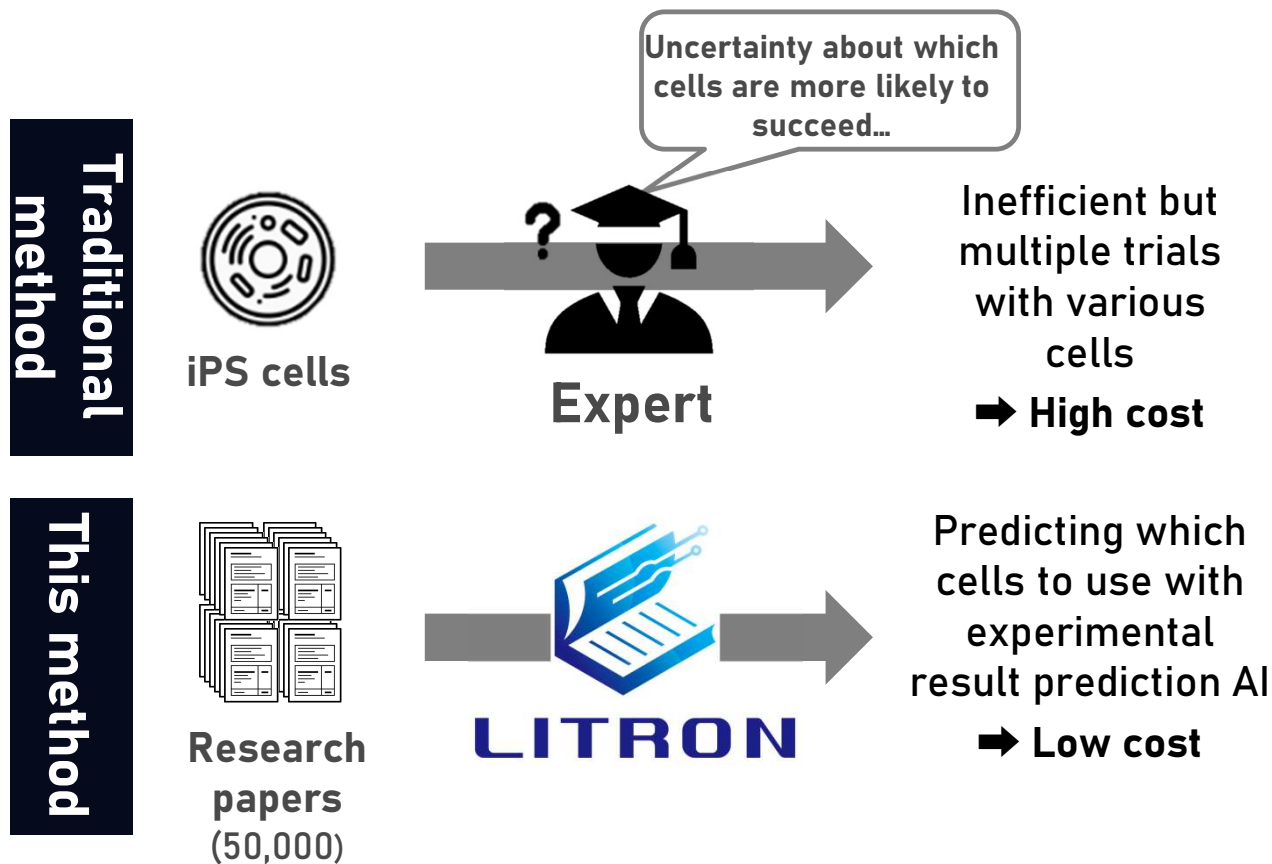


LITRON

Ability to comprehend texts with high accuracy in a short amount of time.

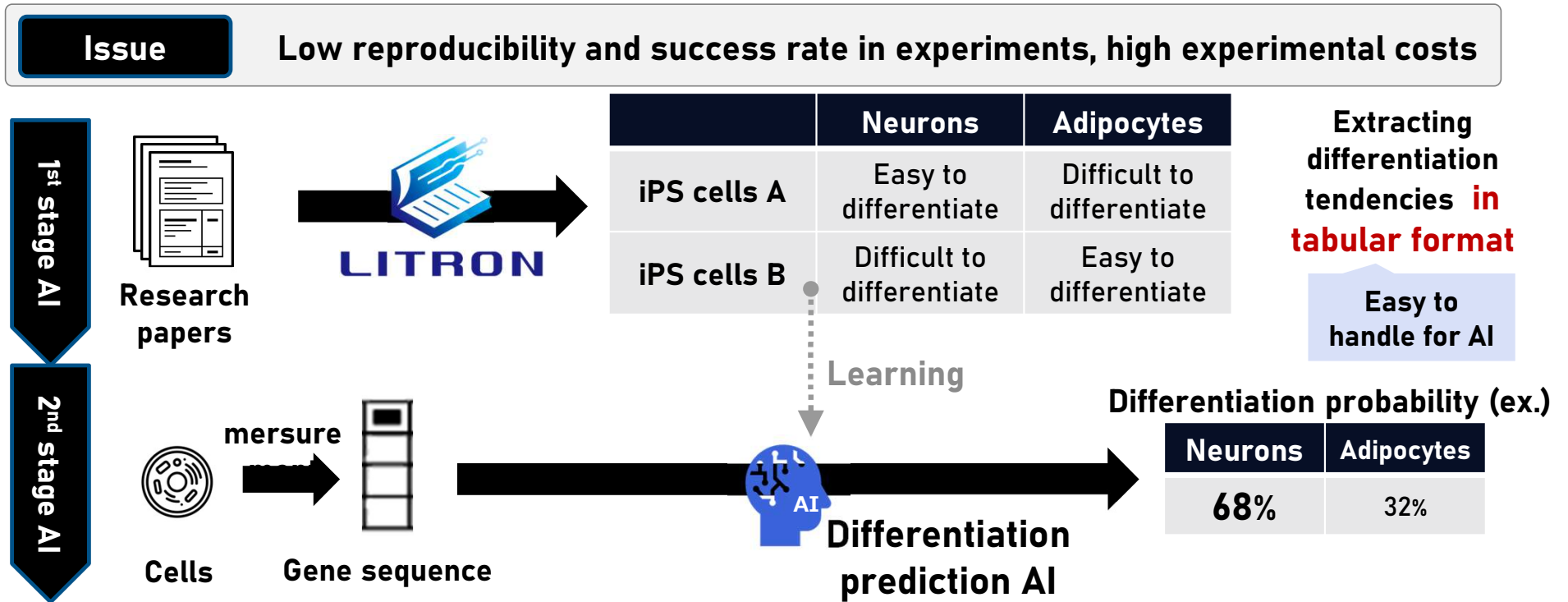
Case Studies | Predicting experimental results in regenerative medicine

High-accuracy text comprehension with AI → Predicting **experimental success**



Case Studies | Predicting experimental results in regenerative medicine

Extracting differentiation tendencies from papers (First-stage AI) and predicting differentiation destinations based on cell characteristics (Second-stage AI) Reducing experimental costs through pre-selection of cells that are more likely to differentiate into target cells



The 1st stage AI extracts differentiation tendencies with approximately 90% accuracy. The effectiveness of the 2nd stage AI has been verified in simulations.

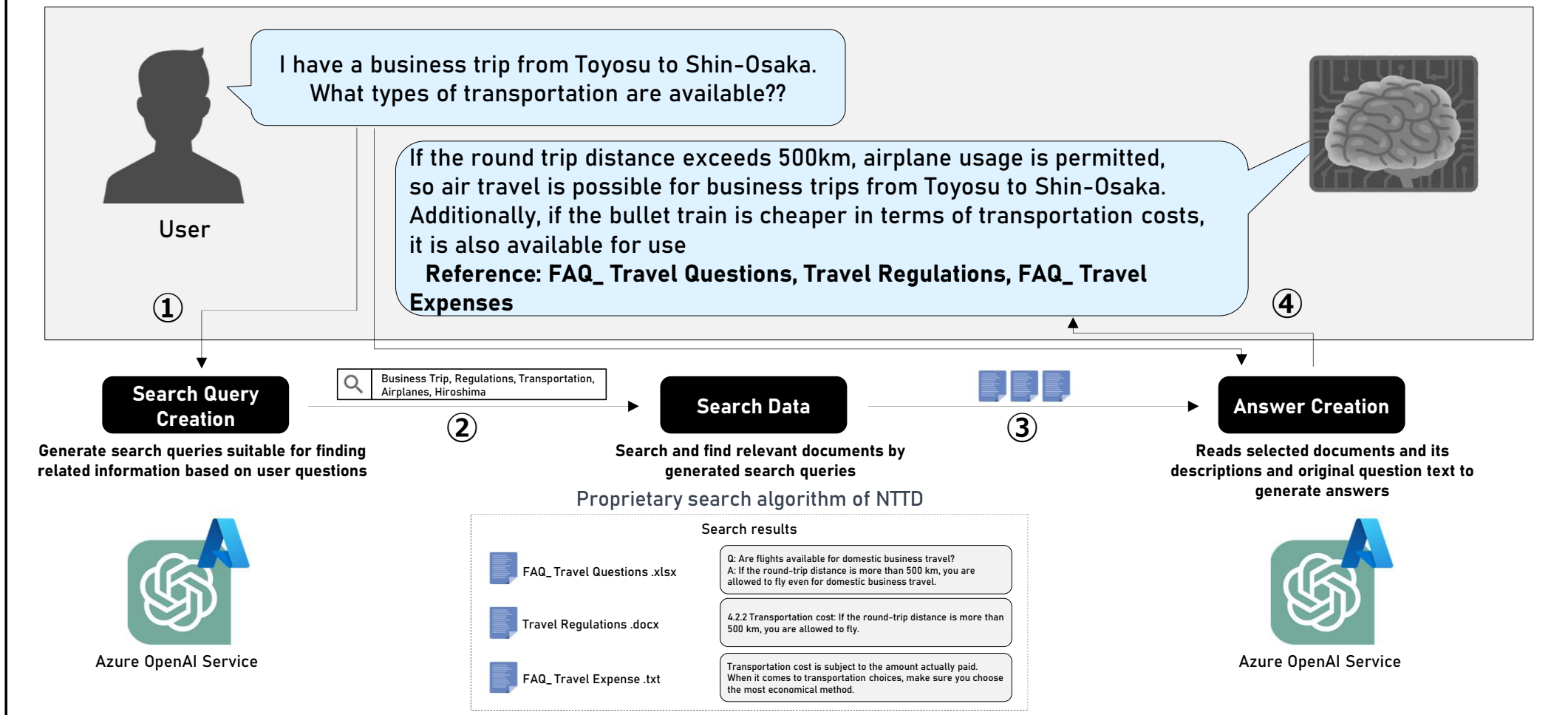
LITRON® Generative Assistant

■ We have started providing document reference chat service “LITRON® Generative Assistant” on June 29.

The screenshot shows a news article on the NTT DATA website. The header includes the NTT DATA logo and navigation links for '企業情報', 'ニュース', 'サステナビリティ', 'IR情報', and '採用情報'. The main headline reads '多様なデータを連携させて根拠ある回答文を作成する生成AIサービスを提供開始' (Start providing generative AI services that create evidence-based response text by linking diverse data). A sub-headline says '～参照データを明示することで、回答の信頼性を向上～' (Improving the reliability of answers by explicitly stating reference data). The article text, dated June 29, 2023, explains that the service links internal and external data to create evidence-based responses using LITRON's natural language processing technology. It also mentions the use of Trusted Data Foundation's Analytics Managed service for security and high-quality response generation. A sidebar on the right contains sections for 'ニュースについて' (About News) and 'ニュースメール配信' (News Email Distribution), with a link for 'メール配信のお申し込み' (Sign up for email distribution).

Example

LITRON® Generative Assistant



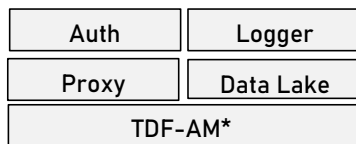
LITRON® Generative Assistant

New Generative AI solution for internal general-use
created by combining advanced technology and business requirements

- We provide services that link internal and external documents with the LLM and enable you to answer questions based on evidence.
- We use TDF-AM^{*}, a data analysis platform provided by NTT Data, to provide secure managed services.

NTT DATA

Original Search Algorithm
and Secure Platform



*TDF-AM : Trusted Data Foundation Analytics Managed Service Of NTT DATA

LITRON Generative Assistant

子供が入院したため休みを取りたいのですが、どのような休暇が取得可能ですか？

子供が入院したため休みを取りたい場合、子の看護休暇が適用されます。子の看護休暇を取得する場合は、原則として、子の看護休暇申出書（社内様式7）を事前に人事部労務課に申し出ることが求められます（文書タイトル: 09_育児・介護休業等に関する規則.doc, 3）。

Multilingual

った時間に対応する賞与が減額されます（文書タイトル: 09_育児・介護休業等に関する規則.doc, 4, 5）。

さらに、年次有給休暇も利用可能で、文書タイトル: 06_賃金.docの第7条によれば、年次有給休暇利用時に精勤手当が支給されることが示されています。ただし、精勤手当の計算においては年次有給休暇取得時に出動したものとみなされます（文書タイトル: 06_賃金.doc, ①）。

休暇の取得方法や条件については、所属する会社の規定に従ってください。

【参照元(就業規則より)】
09_育児・介護休業等に関する規則.doc, 05_休暇等.doc, 06_賃金.doc

質問を入力して Enter を押してください

参照先の文書ストア 就業規則

※LITRON®:
<https://enterprise-aiiot.nttdata.com/service/litron>

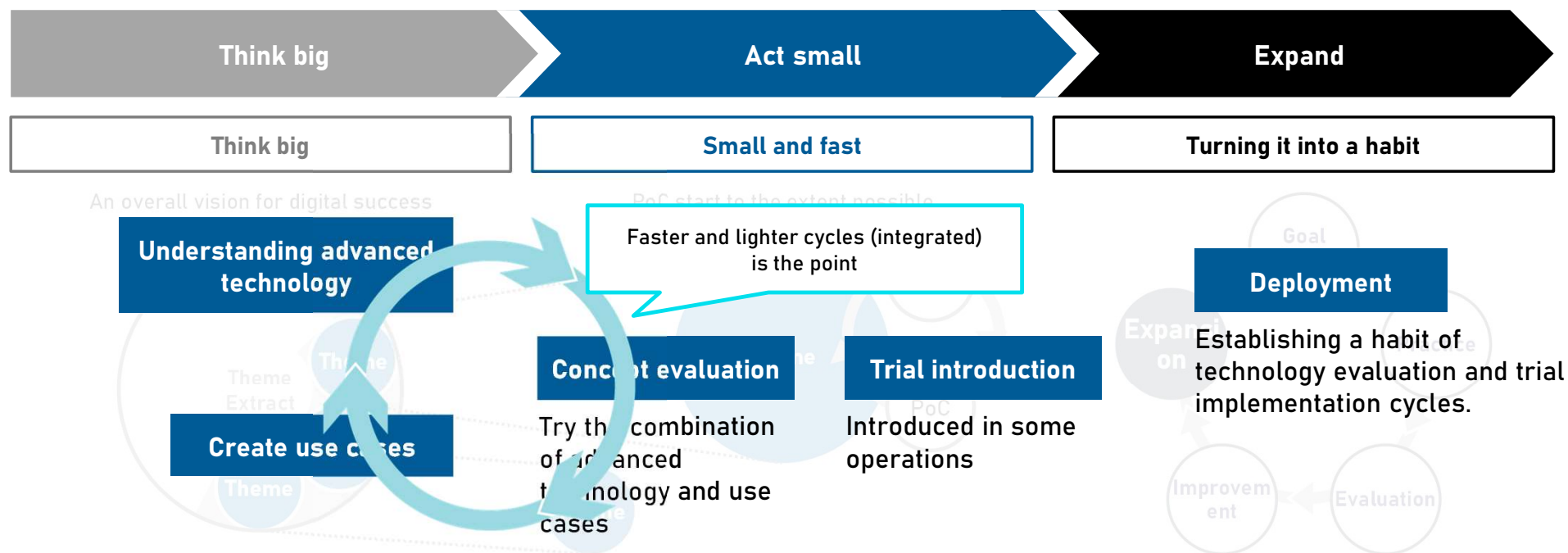
※TDF-AM:
Trusted Data Foundation Analytics Managed Service
https://enterprise-aiiot.nttdata.com/service/tdf/tdf_am

Point of service

Point of view	Challenge	Service points
Performance	the response remains at a general level	By allowing AI to refer to business documents as needed, it becomes easier to obtain answers that are relevant to the tasks at hand
Difficulty to build	Difficult to build system and models	The pre-built AI system can be used as a cloud-managed service for easy deployment.
Flexibility	Technology is still in progress	It is possible to add or replace connection models/document stores to align with technological advancements and needs.
Reliability	Consideration for the AI hallucination problem	By allowing AI to refer to relevant documents, the risk of AI generating hallucinations can be reduced. Explicitly indicating the source document enables the review of the answer results as needed

Steps of Value Creation for Generated AI & LLM

The key point is how to accelerate and streamline (integrate) the cycle of technology understanding, use case generation, and concept evaluation.



Create effective and efficient use cases
With LITRON® Generative Assistant

Please feel free to contact us.

