



Disruptive Innovation for Good

How to take advantage of 'phygital' over the coming decade

Nadeem Ahmad
Senior Vice President, Technology Strategy, NTT

What is true disruptive innovation?

You'd be forgiven for thinking a constant cycle of disruption was the norm. No sooner is one transformation project complete than the next wave of change appears around the corner. Questions around where to focus, and what's going to make the greatest impact are always present for the C-suite. Are our efforts to disrupt truly innovative? And, what will the impact be on the business as digital takes an increasing stranglehold on every system and process?

The answers to these questions are just some of the tasks NTT Disruption considers on a daily basis. While our venture capital colleagues focus on the technology you need over the next one-to-three years; we help you understand what's going to happen over the next five-to-ten years. In particular, how disruption will impact your organization.

At its heart, our current work focuses on the notion of **'phygital'**. That is, the coming together of the physical and digital worlds. While the physical world has limitations around scarcity, the digital world continues to grow exponentially.

Phygital explores just how far we can go. But, as we move increasingly into a purely digital world, how we use technology and the subsequent data it delivers, leaves us at an important crossroads. Are we focused on using technology for good, and further to that, good for whom?



How this impacts your business

Staying relevant is not only crucial to your business, but preys on the minds of your workforce too. There are major implications for them, as we dive deeper and deeper into a digital world.

As you collect more data, you become highly adept at delivering to your customer's needs. Exactly how will you use that data? Is data friendliness top-of-mind?

Phygital will enhance your ability to deliver greater customer experiences and develop new revenue streams.

Technology for good and the workforce

Phygital will impact organizations greatly – particularly the workforce – over the coming decade. As we transition from the physical world and its finite resources – combining it with the digital – a world of opportunity for disruption arises. Yet, go too far and the pathway towards technology for bad will supersede our otherwise good intentions. The workforce has the potential to become irrelevant as machines eat into our jobs; thus, people's welfare will suffer. But, seen within a technology for good context, disruptive innovation can greatly empower human capabilities.

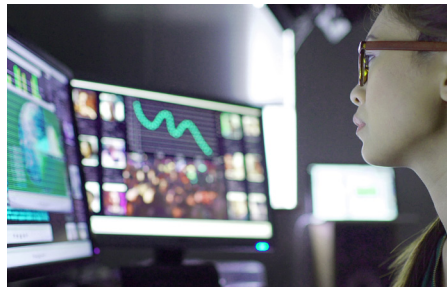
The hybrid workforce – humans and machines working together

The merger of humans with machines in the workplace can be fraught with challenges. It can often be viewed in a highly negative context. Crucial to the success of any integration between the two is the creation of an emotional connection between human and machine, which then engenders trust.

Currently, we simply transact with technology. We ask it to do something and it complies. Yet, the relationship must go deeper if we're to build an effective and trusting hybrid workforce. Human nature is to build emotional connections. That also has to happen with devices in the workplace. Only then will we form trust, and use it to empower both the employee and the business.

One example that moves us in this direction are conversational AI platforms (CAPs), albeit a baseline example with more advancement ahead. They are general purpose platforms that deliver a new paradigm, supporting AI-rich, pervasive, proactive and conversational applications. A range of focused AI services are needed, including natural language processing (NLP), deep learning, sentiment analysis, personality profiling, concept-relationship extraction and other methods for inferring intent from content and context.

Chatbots and personal assistant apps (like Siri, Cortana and Amazon Echo) acting as conversational intermediaries



CAPs deliver a new paradigm, supporting AI-rich, pervasive, proactive and conversational applications.

with intelligent cloud services were just the beginning. The conversational aspect of the CAP supports the development of conversational systems, with NLP rapidly replacing rule-based synonym and phrase substitution to interpret user input.

We're now talking about tools and services to support immersive, continuous and contextual experience, going beyond the voice/text-powered conversational interface, and delivering the pervasive aspect of the CAP. The platform detects and adapts to patterns in the user's behaviour, asks questions to clarify the user's requests, provides unsolicited and meaningful suggestions, and autonomously acts on the user's behalf.

CAP-enabled applications move away from fixed commands for communications between people, bots, agents, assistants, applications and other services. They help us move toward creating emotional connections between the two and more robust and meaningful experiences for people and society.

The OnDemand digitized workforce for good

For years, consumers have used the power of digital to interact through platforms such as Airbnb and Uber to solve pain points. This is now coming to life at an enterprise level through NTT's Likuid platform. With so many projects taking place at any given time, large enterprises want to employ an iterative, fail-fast mentality. Yet cost and scalability are major drawbacks to achieving this. The physical world, the one occupied by humans and their resources, is limited by [scarcity](#).

Likuid helps organizations scale enterprise projects extremely quickly.

This is the ultimate disruption playground – the ability to combine human thinking with infinite machine resources. It dramatically reduces costs, using people as crowd managers and only when required. For the most part, basic repetitive tasks are performed by bots. When you're playing with exponential technology, Likuid has the ability to take ideas and move them to reality quickly. It combines the physical and digital at scale.

Embracing disruptive innovation

As we continue to help organizations reinvent themselves using technology for good, we follow five golden rules for true disruptive innovation:

- 1. Think big, start small.** Push ahead with the big crazy ideas, but do so iteratively and in a considered manner.
- 2. Wonder** about the what-ifs and dream.
- 3. Disrupt. Disrupt. Disrupt.** If you aren't changing in line with your customers, you're irrelevant.
- 4. Good is the new cool.** People care about how and when you use their data – use it wisely and for good purposes.
- 5. Show me the money.** Because if it doesn't sell and make money, then it's no use to anyone.

In tomorrow's intelligent world, innovation will be crucial to the way businesses operate every day, resulting in constant, incremental innovation, driven and enabled by technology. With our view on what will impact your organization in the next five years, together with NTT Venture Capital, NTT Research and NTT R&D, our collective of innovation business practices join forces to disrupt and transform your future through NTT Ltd.'s [Intelligent Innovation](#) framework and solution offering. Through innovation in partnership, and innovation through collaboration, we work together, seeking new ways to help you drive market differentiation and harness our collective innovation intelligence.



About NTT Disruption

NTT Disruption creates the most disruptive solutions along with business partners, global game changers and people. We are on the mission of empowering small but smart things which lead to big changes for good. We create solutions based on exponential technologies in the domains of cognitive social agents, liquid platforms and Phygital Spaces. We co-create, co-validate and co-accelerate with key players in any field. We do it for good, focusing on the impact in both society and people.

For more information, visit <https://disruption.global.ntt>.

About NTT Ltd.

NTT Ltd. is a leading global technology services company. We partner with organizations around the world to shape and achieve outcomes through intelligent technology solutions. For us, intelligent means data-driven, connected, digital and secure. As a global ICT provider, we employ more than 40,000 people in a diverse and dynamic workplace that spans 57 countries, trading in 73 countries and delivering services in over 200 countries and regions. Together we enable the connected future.

Visit our website: hello.global.ntt.



Together we do great things