ASX Announcement

BrainChip – Annual General Meeting CEO and Chairman's Address

Sydney 26 May 2021: BrainChip Holdings Ltd (ASX:BRN), appends the Chairman's address, Chief Executive Officer's address and presentation to the Annual General Meeting, in accordance with the ASX Listing Rules.

This announcement is authorised for release by the BRN Board of Directors.

About BrainChip Holdings Ltd (ASX:BRN)

BrainChip Holdings Ltd is a leading provider of neuromorphic computing solutions, a type of artificial intelligence that is inspired by the biology of the human neuron. The Company's revolutionary new spiking neural network technology can learn autonomously, evolve and associate information just like the human brain. The proprietary technology is fast, completely digital and consumes very low power. The Company provides software and hardware solutions that address the high-performance requirements in civil surveillance, gaming, financial technology, cybersecurity, ADAS, autonomous vehicles, and other advanced vision systems. www.brainchip.com

Company Contact:
Kim Clark
Company Secretary
Ph: +61 7 3010 9393
Email: kim.clark@boardroomlimited.com.au

Chairman's Address

Let me start by expressing management's and the Board's gratitude for your continued support and patience as we strive to bring Akida to full commercialization.

As you all know, 2020 was highly impacted by the Covid-19 pandemic. The safety of our employees and safe interactions with our support service providers and prospective customers were of utmost importance and we're glad to report that we managed reasonably well through this challenging period.

2020, as we noted at the prior AGM, was to demonstrate the feasibility and functionality of the Akida Chip which we successfully completed through a Multi-Project Wafer shuttle with the assistance of Socionext and TSMC in the second quarter of 2020. We then evaluated Akida and commenced shipping Evaluation Boards to our Early Access Program [EAP] partners in the fourth quarter.

Having proven the functionality of the design, we then focused our resources on the production version of Akida which we successful handed over to Socionext in the first quarter of 2021 and is now with TSMC for production fabrication. While the Akida Chip dominated our focus in 2020, we also continued to promote BrainChip's IP which landed us our first Intellectual Property License Agreement with a leading Japanese semiconductor company in the fourth quarter of 2020.

Though we've made some advances in the fabrication of Akida and in licensing our technology, my point last year about BrainChip being a pioneering start-up in the field of Artificial Intelligence, while being a publicly-listed company in the ASX, has not radically changed. We still are introducing ground breaking, highly differentiated AI technology in a relatively nascent market where even some of our potential customers are themselves still evaluating how to best approach this huge emerging market.

As Peter will address more, later in his Company update, we stand committed to make BrainChip a success. We are expanding our focus to not only harness potentially big opportunities with EAP partners like Ford, Valeo and NASA, but to also create recurring revenue streams.

Now, let me address certain Remuneration matters and recent departures with the Company:

Though we appreciate certain stockholders' sentiment over of our remuneration practices, I would like to emphasize that the Remuneration Committee and the Board remains very cognizant of these matters but also have to maintain competitiveness in the markets in which we operate and recruit from. In 2020, we did not increase the base compensation of our KMPs except for our CDO's in recognition of his and his team's advancement of the Akida chip. We did not grant incremental equity to our KMPs except for a customary and competitive refresh grant for our CFO, for retention purposes. We did hire our VP of Sales and Marketing in 2020.

One of the resolutions for this AGM as noted in the NOM was a grant of options to one of our non-executive Directors who joined us late 2020. This initial director grant of equity was reasonable and aligns our interests with that of our stockholders. We will collectively share the success of BrainChip. When you realize the return on your investments in the Company, only then – so will we.

As we've previously announced, Mr DiNardo and Brainchip had a mutual agreement for Mr. DiNardo to step down as our CEO. Though we appreciate Mr DiNardo's contribution to the company, this also gives BrainChip an opportunity to attract a CEO that is more appropriate for our stage and commercialization phase. This is no easy task given our objective to find a CEO that will take us to the next level. For the first couple of months since Mr DiNardo's departure management and the Board focused on tapping our individual networks for potential candidates. We are pursuing certain people on our list and in parallel have evaluated search firms that we might engage after exhausting our own network of candidates.

Sadly, we lost another director just recently, Ms Steele, for urgent personal matters. We thank Christa for her 8 months service and wish her and her family the best.

Peter our interim CEO and executive director, Geoff Carrick our Australia-based non-executive director and I are all committed to bring BrainChip our next stage CEO and recruit directors that will enhance the governance and oversight of our Company.

Thank you for allowing me to share a few comments. Now let's proceed with the Formal part of the meeting.

Chief Executive Officer's Address

BrainChip is entering an exciting new era as we move from an R&D focus to a manufacturing and sales focus. We have an exciting product, a product that is entering the market at the right time, with the right features that enables clients to design Artificial intelligence into products that are powered from a small battery, wearable electronics, or remote sensing equipment that does not require an internet connection to operate. Information is processed right next to the sensor. This is "the edge" – no internet connection to the cloud is required. Performance is not compromised by transmission delays or bandwidth problems, and security is enhanced because nothing needs to be transmitted. We are starting here with our standard disclaimer. We use forecast information about market size and applications from 3rd parties. Like weather forecasts, a lot of effort goes into getting these forecasts right, but they cannot be right all of the time.

You may have seen this video already. It mentions 'neuromorphic event-based processing'. Now that is a mouthful. What does that mean? Neuromorphic means that the chip is processing information in a similar way that the human brain is processing information. Our brains do not need a computer program to function. The brain learns everything it learns when it comes across images, sounds and other senses. The brain learns instantly. We do not need a thousand images of a dog to recognize a dog. A child will see a dog once, is told that it is a dog and then will recognize every dog.

The circuits inside Akida have a similar function to the cells in the human brain. These circuits are processing incoming information in parallel, all at the same time. There is no program code to make them do this, they are designed to imitate the processing method of the cells in the brain, including the learning function. Neuromorphic literally means 'like the brain.'

Event-based means that it only processes things that are important. The brain does this too. Only when something changes is it necessary to process anything. For instance, if you have a camera pointing at a room that is empty the image is processed once. Then no further processing is needed until someone walks into that room. Then you can decide if they person is allowed to be there or not. This saves a lot of power.

Artificial Intelligence is a fast-evolving market. Some of the applications we have come across so far are remote controllers, financial forecasting, cameras, food safety, food quality and taste control, intelligent refrigerators, disease detection in breath - and blood samples. We expect that there will be many more. Artificial intelligence is a technology trend that will see use in many everyday products. It is likely that manufacturers who neglect to incorporate AI into their products will fall behind and lose market share to others who have incorporated intelligence in their products.

I will give you just a few examples of how beneficial AI will improve the quality of our lives. Refrigerators equipped with Akida could smell if anything is going off and tell you what it is likely to be, avoiding food poisoning. According to Google, each year, 48 million people – 1 in every 7 - in the US get sick from eating spoiled food. Of those, 128,000 are hospitalized and 3000 die. (search food poisoning statistics)

The display on the fridge could give an overview of the food in the fridge, and how long it will stay fresh. Doorbells could recognize the person at the door and alert the occupants.

Factory robots are programmed which is a slow and tedious process. In the future they will be equipped with Akida and they can learn their task quickly – a big cost saving. Self-driving cars are also autonomous machines and will benefit from continuous and incremental learning, something only Akida offers.

Your car will be able to recognize faces, making for a more personalized experience, for instance by setting the radio to your favorite station. The same Akida chip can be used to see if the driver is paying attention. 20% of all fatal road accidents involve driver fatigue. Akida can also monitor bearing vibration and engine noise for safety and preventative maintenance.

In medicine, Akida can 'smell' and classify a variety of diseases using the right sensors. We announced our cooperation with Nanose, who build a room-temperature sensor for the compounds that are present in exhaled breath. Using test data sets that were collected in clinical settings the Akida chip can detect Covid-19 with 93% accuracy, much better and faster than a PCR test. We also signed up Biotome here in Perth who are working on a diagnostic blood test that will incorporate Akida.

Over the next 5 years we expect to see a proliferation of Akida into all kinds of beneficial AI applications that will positively improve all aspects of life.

Brainchip offers several avenues to enable and support the explosion of AI products that we expect to see over the next 5 years. MetaTF is a software tool that works within the Google TensorFlow environment. MetaTF is the development tool that is common to all Brainchip products. We have chosen to use TensorFlow because most data scientists are already very familiar with it. There is no new programming language to learn, and data scientists can dive right in.

The Brainchip Akida IP is offered as an encrypted box that is dropped into a manufacturers chip design. It has been configured by Brainchip engineers for the number of nodes that were licensed, depending on the available space, the power budget and the performance that is required. For instance; The odor classification network can run in just four nodes. The Akida IP has been designed to be modular and can be tailored to fit the requirements. An IP license is followed by royalties that are payable on each product that is manufactured.
The Akida chip - AKD1000 – is offered as a low-cost device for development, prototyping and small series manufacturing. We designed this chip to fit a wide range of applications, with many interfaces, a microprocessor, and a neuromorphic processor array of 80 cores. Once a requirement goes over a million units, we recommend licensing our IP to build a custom chip. This would be the case for instance for consumer goods.

Our design partners receive training and tools to design custom boards for Akida product clients.

Brainchip has designed and will be manufacturing at least three different modules. The M.2 size module shown here will be used in laptops. Most laptops have a M.2 slot. The USB3 dongle can be used in any USB port. We also have a PCIe board that plugs into a desktop computer. Solution providers will use these modules to build products.
An exciting new product is the Tachéon Pi module. This module plugs into a Raspberry Pi and this makes a complete embedded system that can be integrated into products straight away. It makes a great educational kit for people to familiarize themselves with Akida as well.

MetaTF, together with our modules are the tools that quickly enable engineers to use Akida in a wide range of home appliances; intelligent washing machines that sense washing loads, temperature, and wastewater. Fridges that know when food is off, control systems and preventative maintenance in cars, intelligent doorbells that recognize people, driver assist systems and thousands of other applications in smart home and industrial sensing and safety.

A trend that has been observed is to move intelligence to "the edge'. What is the edge? Basically, it is every piece of electronics that does not need to connect via the internet to a large data centre to work.

Most of today's intelligent 'edge' devices – like Amazon Alexa – send everything through the internet up to 'the cloud' – which means nothing but connecting to a huge computer system in a megawatt-burning, water-cooled data centre. The data-centre colossus does all the heavy 'AI' lifting, it processing the remote data and sends the answer back to Alexa. Here a second delay does not matter much, but if you are in a far moving car it could be deadly. The next evolution of this process was to set up regional data centres, closer to the user products for distributed processing. This solves some of the problems. It is faster because transmission lines are shorter. The regional data centre is still a large behemoth computer that burns many hundreds of kilowatts and needs forced cooling. The security threat is not diminished. Bandwidth and latency problems are still significant. Maybe now you travel 15 meters before your car gets a response, but that is still deadly.

Edge of the cloud platforms bring processing even closer to the application devices. These are smaller computing devices that do some local processing and communicate with the cloud. Delays are still significant because these computing nodes are not as fast as the large data centre computers. Security is still a problem because anything that runs programs can be hacked.

- With over 30 billion IoT devices and 10.3 billion computers connected to the internet over the next 4 years, there will be insufficient bandwidth. Metadata, the output from Akida, can solve this problem.
- The delay to get information back will increase because of this, causing a bottleneck.
- In a self-driving car at 110 km per hour you travel 30 meters per second. Much can go wrong in a second.
- Devices that rely on the cloud do not work at all where there is no internet, or the internet is down.
- Connected devices, such as cameras, medical diagnostic applications, can be hacked causing a serious security threat.

Akida represents the advanced far edge – sensors and application devices that are far removed from any data centre and don't need to have an internet connection at all to work. All processing is done on Akida, at the point of acquisition.

The Akida neural fabric consists of simulated brain cells, and they do not run a program so the neural network cannot be hacked by inserting malicious code. Akida is fast, and delays are minimized. Security is improved, processor efficiency is improved, internet bandwidth is improved or eliminated, and Akida can continue to learn after leaving the factory.

In parallel to developing Akida and the MetaTF development environment, we have endeavoured to develop an expanding range of application examples. We are not a solution provider – but a chip manufacturer.

We have examples for Akida in real-time learning, odour classification that can be used for food safety and disease detection, bacteria in blood detection, 3D point cloud object recognition, air quality classification, cyber security and access control security, anomality and fault detection. This covers all the main areas that you see here.
Expands to many different applications, resulting in expanding opportunities for the Akida neuromorphic processor chip.

In healthcare for instance, we can sniff and detect disease or monitor blood samples, but also see use in robotic surgery systems, X-ray and ultrasound image interpretation, patient statistics, and patient monitoring systems (artificial nurse).

Figure 1 gives a quick comparison of Akida to the biological brain and standard deep learning methods. Important things to notice here are the power consumption, microwatts – that is millionths of a watt to milliwatts. To put that into perspective, an odour classification system could run on a penlight battery for 5 months. Akida is a 'green' technology. It also

learns in real time on the chip, and it is very efficient and fast compared to the 'old' GPU method.

Our current examples cover all five senses of humans:

- Visual object detection, manufacturing
- Accelerometer & tactile sensor, bridge resonance fault detection, robotics
- Auditory – speech and sound recognition, key word detection, engine noise classification, presentative maintenance
- Olfactory – detection and classification of odours, detecting disease in breath, detecting spoiled food, food manufacturing QC, air quality
- Gustation – food and drink taste control

AKIDA AKD1000 has five main advantages over a large data centre behemoth computer. Akida does the same job, but in a different way. In the same manner as the brain, it is processing data simultaneously in many individual simulations of brain cells. It uses the same learning method as the brain, which learns instantly. It is thousands of times more power efficient. It is small and light weight, which is an advantage for flying machines such as drones, aircraft or in space craft.

It generates almost no heat because it uses very little power.

And we have on-chip convolution. Convolution is a technique that is used in Deep Learning networks. This makes it possible for the Akida neuromorphic processor to run existing Deep Learning networks with extreme efficiently.

The future looks bright indeed. With all the advantages that Akida is offering the expanding Artificial Intelligence industry we are happy to move from a R&D focus into production, manufacturing of modules and sales. We released the design of the Akida chip to our production partners Socionext in Japan. Akida is not a simple chip. It has many layers which are processed at one layer per day. We expect to have several thousand working chips by August this year. We received and tested engineering samples in 2020, many of which have now been delivered to Early Access Partners.

Our sales and marketing team are gearing up to hit the road running. Our priority is the enable design partners and solution providers with the tools they need to start integrating the Akida technology, either as a chip, a module or as IP.

The BrainChip Sales team will continue to drive revenue through licensing of the IP, chip sales and module sales, as well as expanding our design partner program.

Earlier this year we received our first order for an IP license. That project is running well, and the client is happy with our level of support. We are also working on a Proof of Concept with a large European manufacturer of car electronics systems. We have accomplished much with a small team, more than some of the large guys with deep pockets and large teams have.

The 7 stages in the sales process:

Creating awareness, through online blogs, trade shows, direct sales, social media, scientific papers and articles

Consideration: does the product match the customers' requirements. We focus on sensor data classification, wearable electronics, medical diagnostics, and consumer electronics, and that includes all the many categories I showed earlier.

Evaluation: The customer engages and evaluates the Akida technology in their application

Customer Support: during the evaluation process, Brainchip engineers and scientists provide the client with support to design the best possible solution to integrate the Akida technology.

IP licensing: Once the evaluation process is finished the client either purchases an IP license or places an order for AKD1000 devices.

Development and testing: The clients develop their own products and tests the products functionally and market acceptance.

Production and sales: At this point the client buys quantities of Akida chips or in the case of an IP license starts to pay royalties on each product manufactured.

This table gives a quick overview of the type of devices and functions enabled by the Akida processor.

Every device can be a wearable electronics device, can be configured by the user, can be battery operated, and can be used in remote, or very remote sensing – AKIDA checks all the boxes.

In autonomous machines, Akida enables user configuration, solar power or battery power operated, and remote sensing. In augmented reality applications, Akida enables Artificial Intelligence in wearable electronics, user configuration (real-time learning), and battery operation. Artificial Intelligence in home appliances, refrigerators, washing machines, TVs, microwave ovens and entertainment systems to name a few, Akida enables user configuration, and intelligent monitoring or sensing. It could put on your favourite channel when it sees you sitting on the couch. In all appliances, it increases security and privacy because nothing needs to be uploaded to the internet. All sensory perception is processed locally, on the AKD1000 chip.

This slide shows the unfair advantage that we have over competing products. Only the Akida AKD1000 checks all the boxes.

We have Micro- to Milliwatt power consumption, real-time on-chip learning and training, a familiar TensorFlow development environment that a data scientist already knows, the possibility to run in stand-alone mode, and we have on-chip convolution to make it easy to port existing Deep Learning networks to the Akida AKD1000.

IBM have a neuromorphic chip called TrueNorth. First, this is an experimental chip. It is very large, about 2.5 square cm and therefore very expensive to make. It does not learn, does not

have on-chip convolution and to use it you must learn a new language called the Corelet language.

Intel have also developed an experimental neuromorphic chip called Loihi. It has a programmable core if engineers want to add their own learning algorithm. It does not have on-chip convolution, and to use it you need to learn the complex neural engineering platform. Both these chips are low power, but not as low as the Akida AKD1000.

Deep Learning Accelerators – or DLAs are math chips, like a small version of a Data Centre. The neural network is executed on the computer but multiplication and additions are accelerated on the DLA chip. They do not support any neural operations, no learning, cannot operate independently from a computer and generally use 2 to 5 watts, or 10x to 1000x more power than Akida, depending on the application.

This is 3rd party forecast of the market for edge devices up to 2025, prepared by Tractica Research. Many of those devices could be using the Akida AKD1000. You can see that by 2025 the market size reaches nearly $58 billion distributed over industrial uses, mobile uses, consumer goods, automotive systems (ADAS, preventative and safety systems), and drones. I expect that air and space craft will also be included in this group.

The prospects for the Brainchip Akida technology are huge. Many, if not most of these systems will need an Artificial Intelligence processor that is small, light, fast and power efficient. We deliver all those capabilities in the AKD1000.

The number of 'Internet of Things" devices will triple between today and 2025. All these devices will be competing for internet bandwidth. IoT is a category of machines and this is different from the 'Internet of People'.

With on-device near-sensor processing, enabled by Akida, internet bandwidth problems can be solved, even when metadata – that is processed already by Akida is uploaded to a central system. For instance - A video stream takes a lot more bandwidth than a simple text warning that an unauthorized person has entered the room.

We expect that many of today's 'dumb' devices will be replaced during over this period by intelligent, Akida based devices. In addition, there will be some 20 billion new devices. This is another great opportunity for the BrainChip Akida technology. You can tell we are excited about those prospects.

If we split up that 58 billion dolar market into market segments we get the chart that is shown here. All of these categories match up with the 'expanding opportunities' slide that I showed earlier in the presentation. The Akida technology is flexible and can be used in a large number of very different application fields.

The IP licensing model that we use is financially attractive. After the initial licensing fees in successive years, the client pays royalties on each product that is manufactured. Royalties continue over the life of the product. This has a cumulative effect – royalties stack up over

the years to come. Every new license has the potential to add a new layer of income to the stack of royalty income. We are right at the beginning of this evolution, with our first license project progressing well.

The AKD1000 chip is in production and we expect sales to take off soon after. Initially, we expect to sell complete modules while our clients are developing their own products and boards. Those modules will contain the AKD1000 chip and the MetaTF tools.
This is where we expect the first production chips to be absorbed. Sales are expected to increase once clients have finished their development work and are integrating the AKD1000 into their products. Module sales are likely to continue into the future, followed by new products such as the AKD2000, which will be a chip with additional features to execute sequence learning networks, known in the industry as LSTM and Transformer networks. Important parts of the AKD2000 are already working now in the lab here in Perth. The AKD3000 chip is in development and will be aimed at capsule networks that are under development at Google and the cortical neural networks of the future.

I already gave away the clue to this slide; Akida AKD1000 is not the end, but the beginning of an exciting range of advanced neural network products, each aimed at a specific market segment of this evolving technology.

I'll illustrate the reason for these products in an example:

Today, if a plastic bag blows across the street, a car equipped with AI sees an object and hits the brakes, or worse, takes evasive action.

Our future networks will be able to learn the difference between a plastic bag, blowing across the street and a rock by their behaviour. They will learn from sequences of events and from observing behaviour. A rock does not get blown in the wind. A door has a handle that makes it open. Objects have not only a shape, but also behaviour and a location in space. Our brain understands and predicts the behaviour of objects and sounds. We aim to build that intelligence into future products so that we enable our clients not only to build intelligent products, but safe and beneficial products.

The decision to end Mr. DiNardo's employment was mutually agreed upon between the Company and Mr. DiNardo. BrainChip is moving from an R&D pre-production phase into a commercial production phase.

It was agreed by both parties that the Company needed to recruit a CEO with the appropriate skill set, the drive and vision to lead the business through the upcoming commercialization phase, and beyond. Lou joined the company in 2016 when we were still in a research stage. Since then we have made much progress, cumulating in the AKD1000 chip being in production, an upgrade to the OTC QX in the US, and the ASX-300 in Australia.

To attract the right people, we must be attractive. Part of that attractiveness is to issue options. Brainchip has to compete with the big boys, Qualcomm, Intel, IBM, and a dozen others who can offer incentives and salaries that are beyond us. To attract the right quality of people we grant options as a long term incentive plan (LTIP).

Each option has a strike price that is equivalent to the share price at the time that the employee joined. They can buy shares at that price when the options vest. It is therefore in their interest to increase the value of the company. This is the incentive that is offered by options. The share price must go up for an option to be worth something. In this way, we align the interests of our employees with those of our shareholders.

We have created a trust, that holds a pool of shares available for allotment to our employees they exercise their options.
We are growing our Sales and Marketing team, our Engineering team, and business operations to meet the needs of our clients. We must have enough people to support a team of Certified Solution Providers and Certified Design Partners. In parallel to our efforts to market the AKIDA technology through sales channels we continue our social media campaigns, publishing in scientific journals and professional publications, trade shows and direct sales.

With the recent elevation of Brainchip into the ASX300 and the OTC QX upgrade in the United States we expect to attract more institutional investors.

I will be doing a roadshow in the eastern states after this AGM.

We are also improving our investor relations communications and you will notice this going forward. We recently employed a professional Investor Relations Manager, who is based in Perth and speaks Australian rather than techie. His name is now on all our releases and he is happy to answer your questions.

We are evolving, not only as an industry leader in Artificial Intelligence hardware, but also as a professional company.

We don't make the sensors, we make them intelligent. Making AI simple – that is also part of our mission.

Thank you.

-    **END**   -

brainchip™

Unlocking the Future of AI.
This is our Mission.

2021 AGM
CEO Update

Peter A J van der Made
Founder and CEO

Disclaimer, forward looking statements

Certain views expressed here contain information derived from third parties or publicly available sources that have not been independently verified. This presentation includes certain statements, projections and estimates of the anticipated future financial performance of BrainChip Holdings Ltd. and the size, growth and nature of future markets for the company's products.

Such statements, projections and estimates reflect various assumptions made by the directors concerning anticipated results, which assumptions may or may not prove to be correct. BrainChip Holdings Ltd. and its subsidiaries have not sought independent verification of information in this presentation.

While the directors believe that they have reasonable grounds for each of the assumptions, statements, projections and estimates and all care has been taken in the preparation of this presentation, no warranty of representation, express or implied is given as to the accuracy, correctness, likelihood of achievement, or reasonableness of assumptions, estimates, statements and projections that are contained in this presentation. Such assumptions, estimates, statements and projections are intrinsically subject to significant uncertainties.

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2021-2025 AI Technology Trends

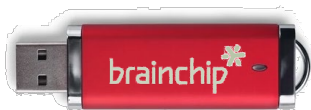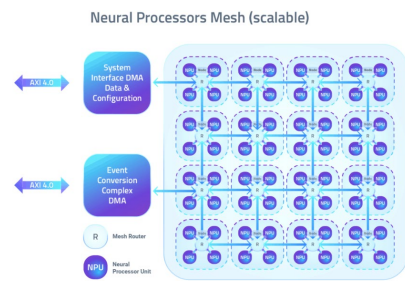Artificial Intelligence in every device

Autonomous Machines

Autonomous and Safe Self-driving vehicles

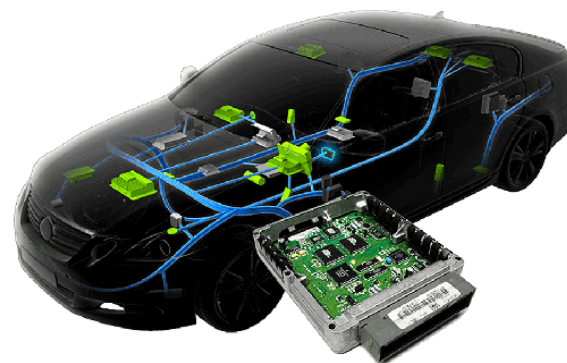Independence from Cloud connectivity

Akida:
Path to Revenue

IP

CHIP

MODULES

USB

AI Moving to the **Edge**

DATA CENTER → EDGE DATA CENTER → EDGE OF CLOUD → AKIDA ADVANCED FAR EDGE

DATA CENTER
Training + inference

EDGE DATA CENTER
Training + inference

EDGE OF CLOUD
Sensing, training, inference & actuation

AKIDA ADVANCED FAR EDGE
Sensing, on-chip training
Fast inference, actuation
user-level personalization
extremely low power
consumption and small size

AI moving to the Edge
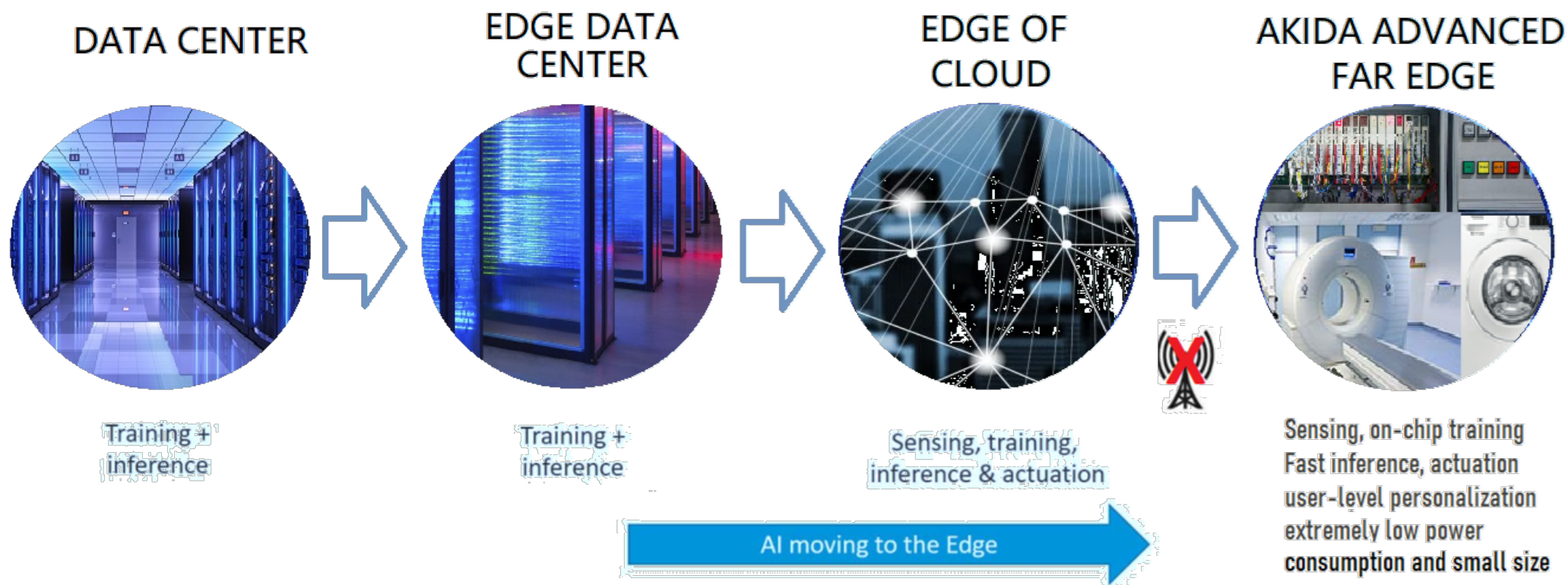
BrainChip Expanding
Opportunities

The BrainChip
Advantage

Figure 1: Comparing the brain, neuromorphic chip, and GPU in AI inference mode

	Human brain	Neuromorphic chip	Deep learning on GPU
Power consumption	~20W	Micro to milliwatts	100s W
Processing speed	Milliseconds	Nanoseconds	Milliseconds
Efficiency (sparsity)	High	High	Variable
Learning rule	Local (we believe)	Local	Global
Event based processing	Yes	Yes	Less suitable

Source: Kisaco Research

The BrainChip Advantage

AKIDA Enables Efficient Processing of All Sensor Modalities

Visual
Image Sensor

Auditory
Microphone

Olfactory
E-nose sensor

Somatosensory
Accelerometer
Tactile sensor

Gustatory
E-tongue sensor

Key
Differentiators

Low Power Consumption

Small and Light Weight

One Chip Fast Learning and Inference

Low Heat Generation

On-chip Convolution
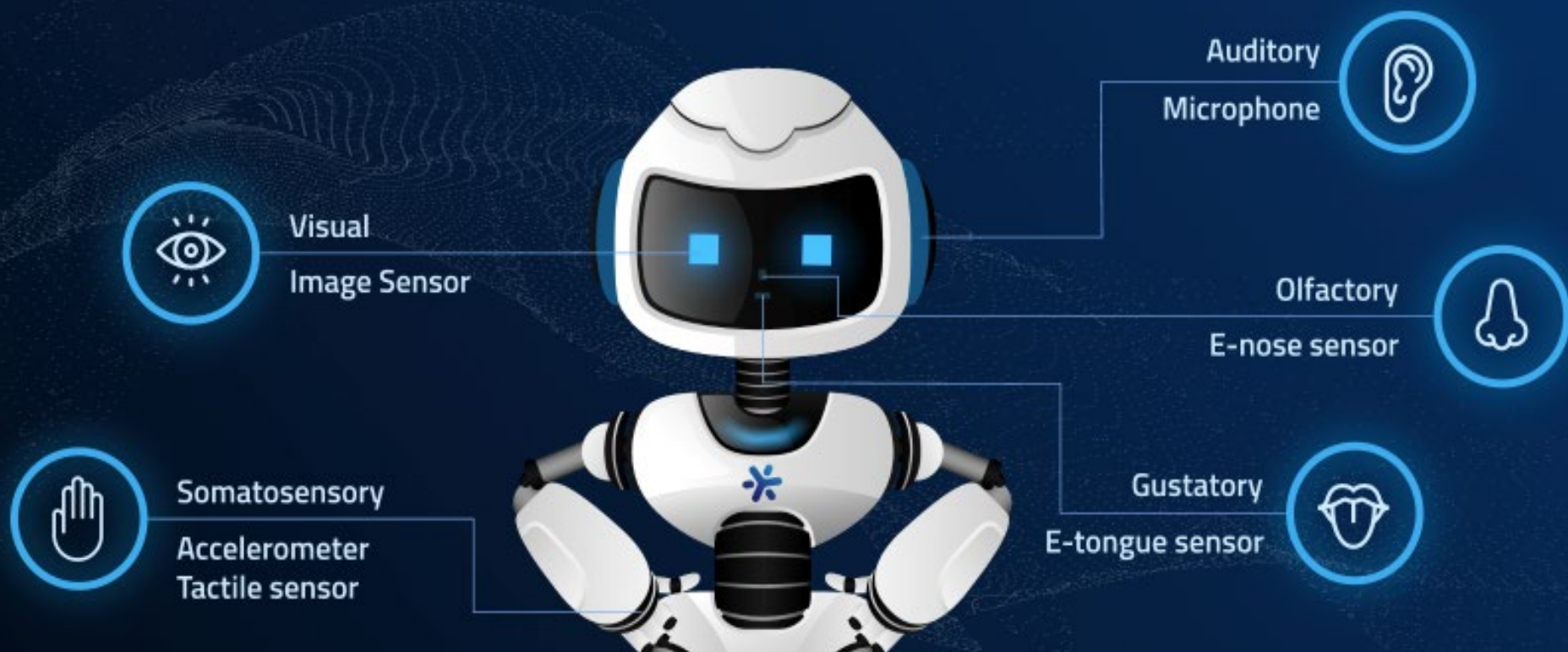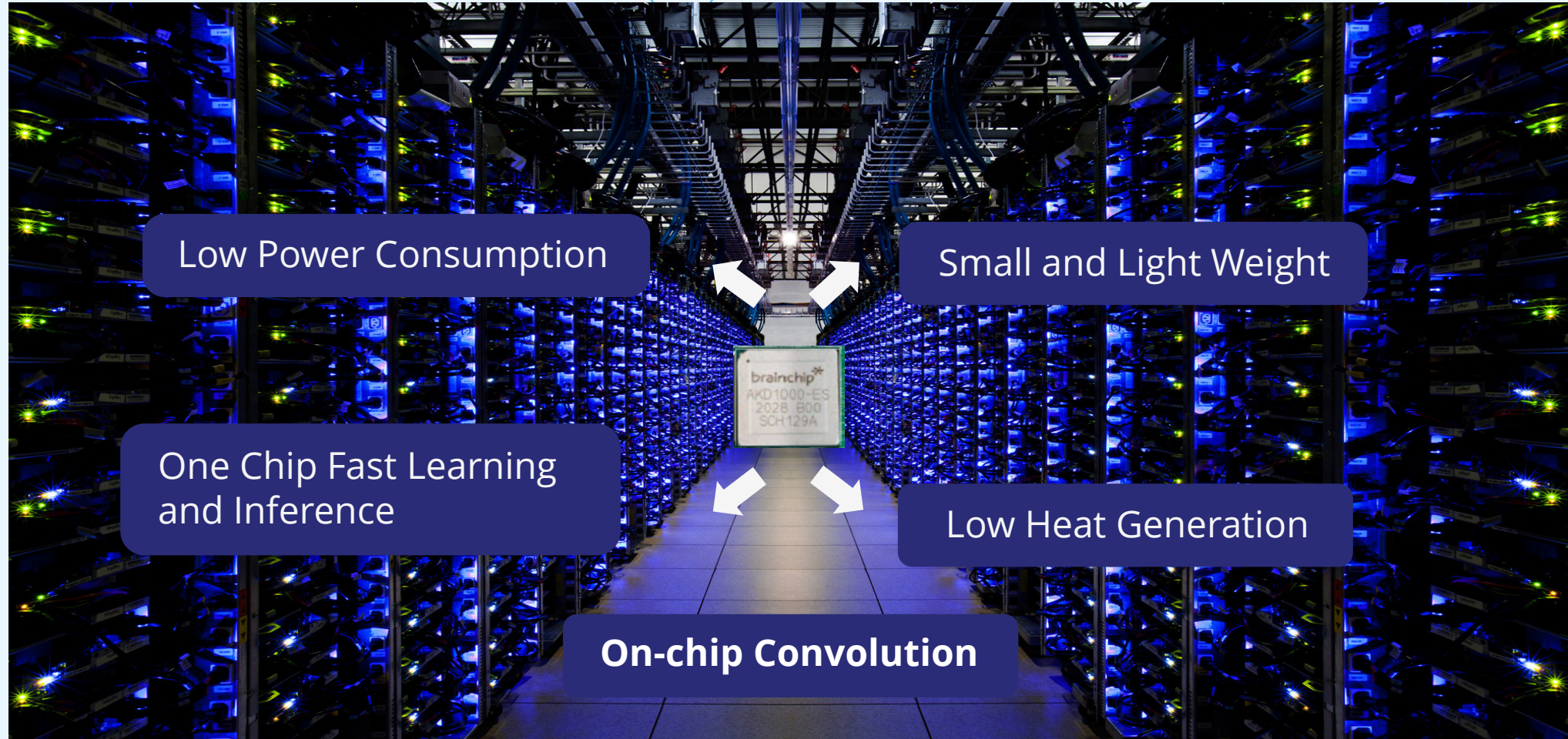
The Future Looks **Bright**

- Transitioning from a R&D Phase into Production and Sales

- Building a network of Design Partners (chip) and Solution Providers (modules)

- Producing First generation (beyond Engineering Samples)

- Driving Revenue by Licensing of the IP, chip sales. Module sales and royalties

- Gaining market share in chip manufacturing and sales

- Tracking IP sales and large accounts

Customer
Engagement

- Create awareness

- Consideration

- Evaluation

- Support

- IP Licensing

- Development and Testing

- Production and sales
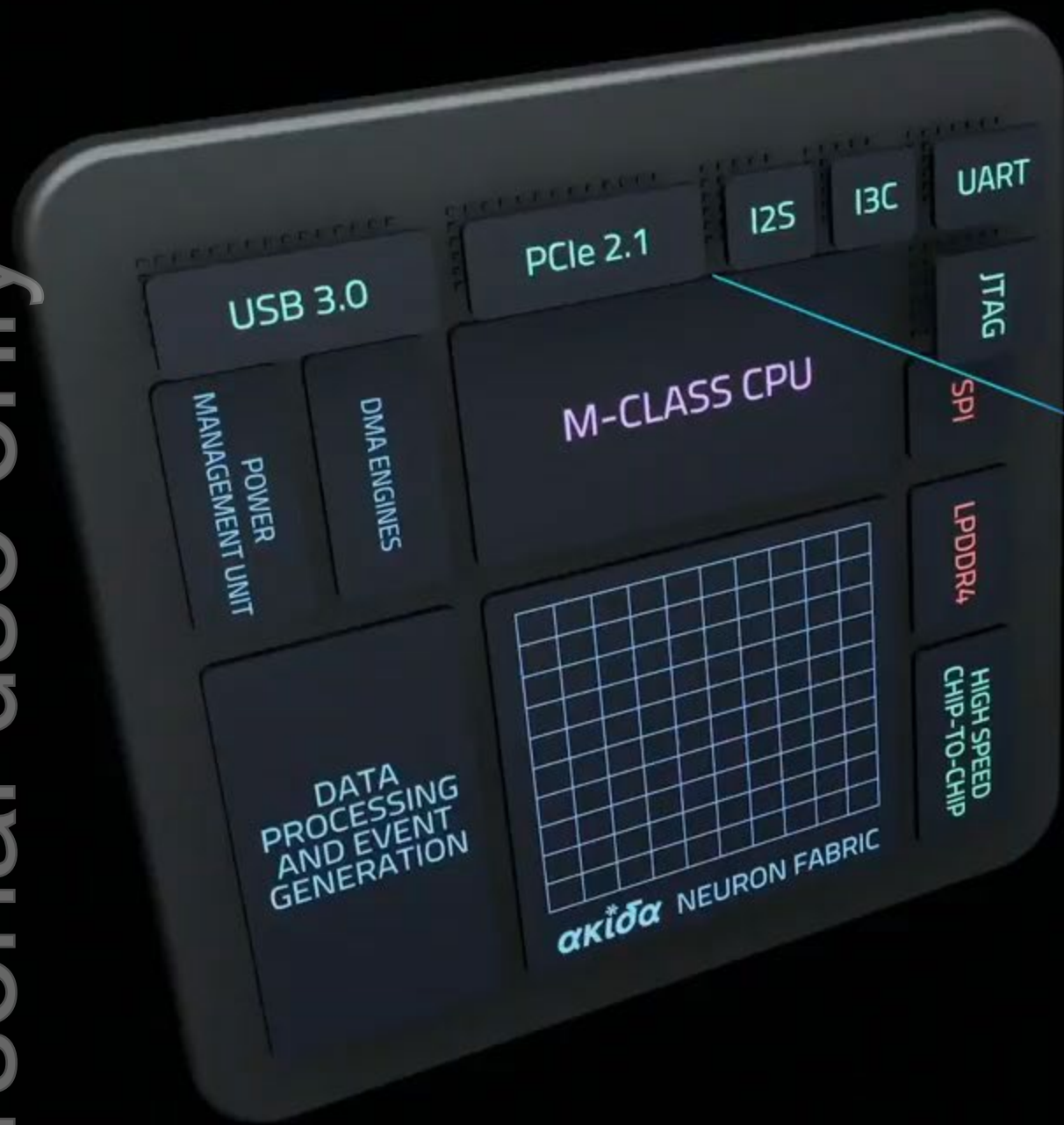
Data Input Interfaces

- PCI-Express 2.1 x2 Lane Endpoint
- USB 3.0 Endpoint
- I3S, I2C, UART, JTAG

Defining Industry Enabling Technologies

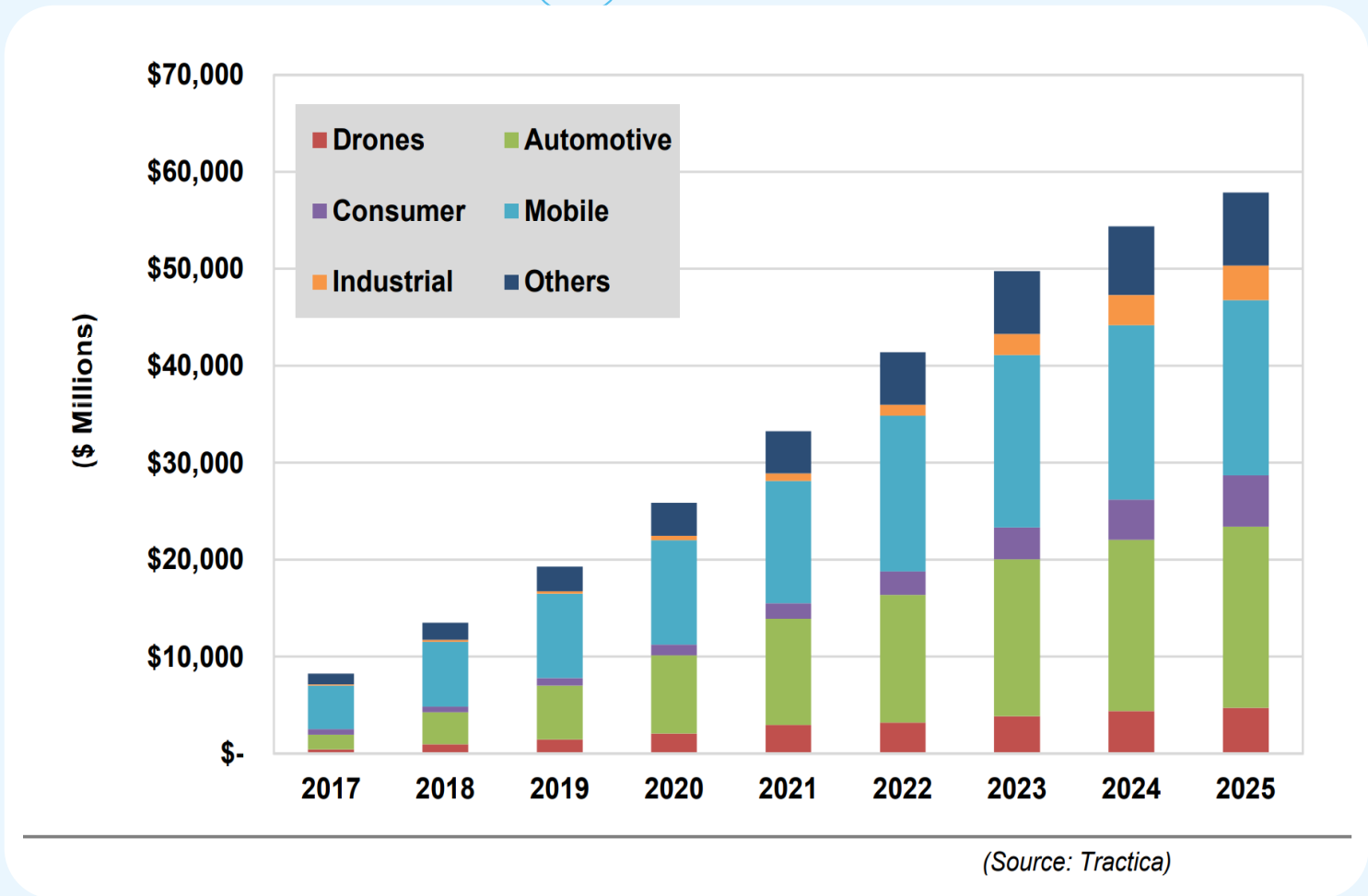| brainchip	WEARABLES	USER CONFIGURABLE	BATTERY OPERATED	REMOTE SENSING
Artificial Intelligence in every device	✓	✓	✓	✓
Autonomous machines		✓	✓	✓
Augmented reality	✓	✓	✓	
Home Appliances		✓	✓	✓
Security and Privacy	✓	✓	✓	✓

Competitive
Analysis

brainchip*	Micro- to Mw Power use	Real-time on-chip learning & training	TensorFlow Compatible	Stand-alone possible (No CPU required)	On-chip Convolution
BrainChip Akida AKD1000	✔	✔	✔	✔	✔
IBM TrueNorth	✔	NONE	LEARN COREL		
Intel Loihi	✔	PROGRAMMABLE	LEARN NEF		
Google Coral TPU	2-5W	Math chip	✔		
DLAs (Nvidia, others)		Math chip	✔		
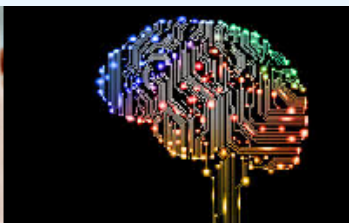
Edge Based Devices requiring AI - $60B by 2025

(Source: Tractica)

IOT ANALYTICS

Insights that empower you to understand IoT markets

Total number of device connections (incl. Non-IoT)

20.0Bn in 2019– expected to grow 13% to 41.2Bn in 2025

Number of global active Connections (installed base) in Bn

Data as of Nov 2020

Xx% = Compound Annual Growth Rate (CAGR)

Note: Non-IoT includes all mobile phones, tablets, PCs, laptops, and fixed line phones. IoT includes all consumer and B2B devices connected – see IoT break-down for further details

Source(s): IoT Analytics - Cellular IoT & LPWA Connectivity Market Tracker 2010-25

Edge AI Market
Forecasts (3rd party)

Chart 3.3   Artificial Intelligence Revenue Share by Industry, World Markets: 2025
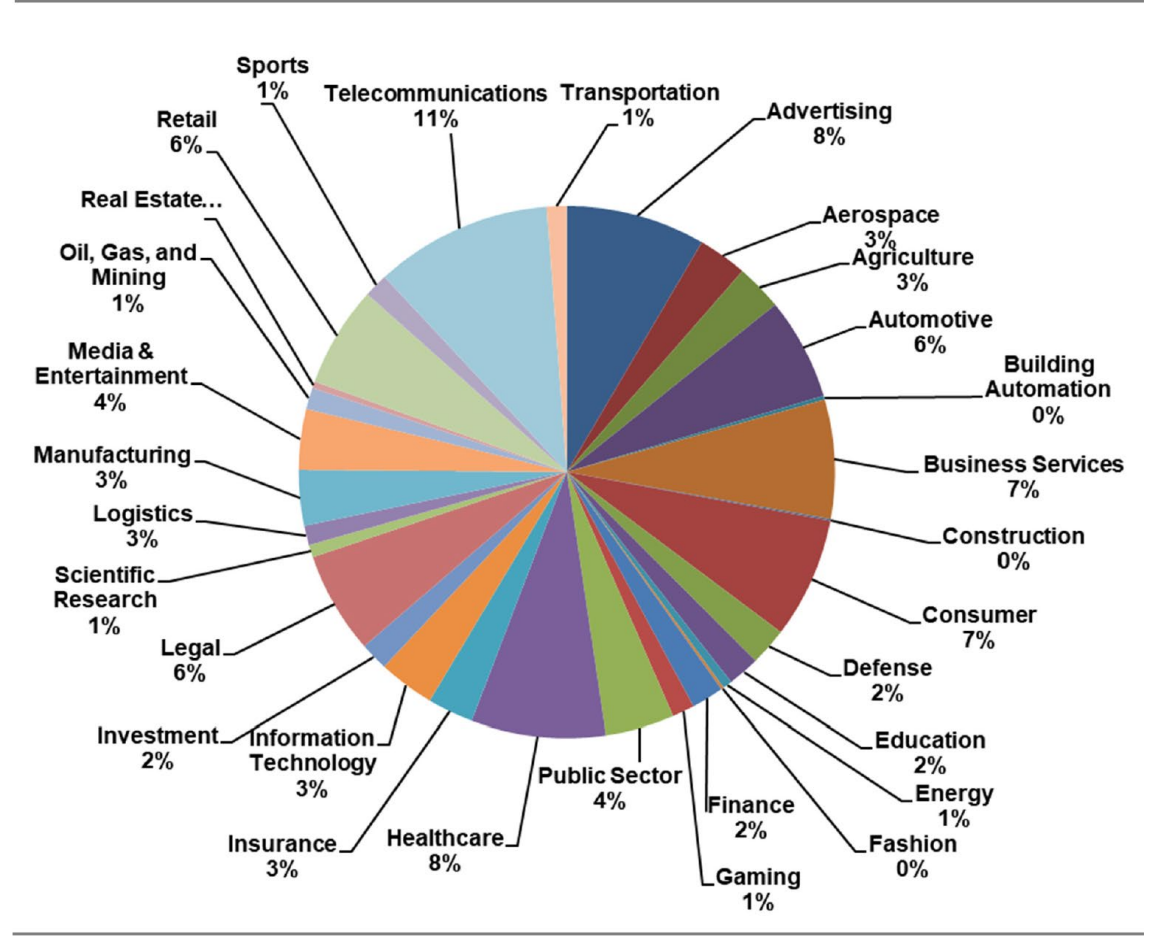
(Source: Tractica)
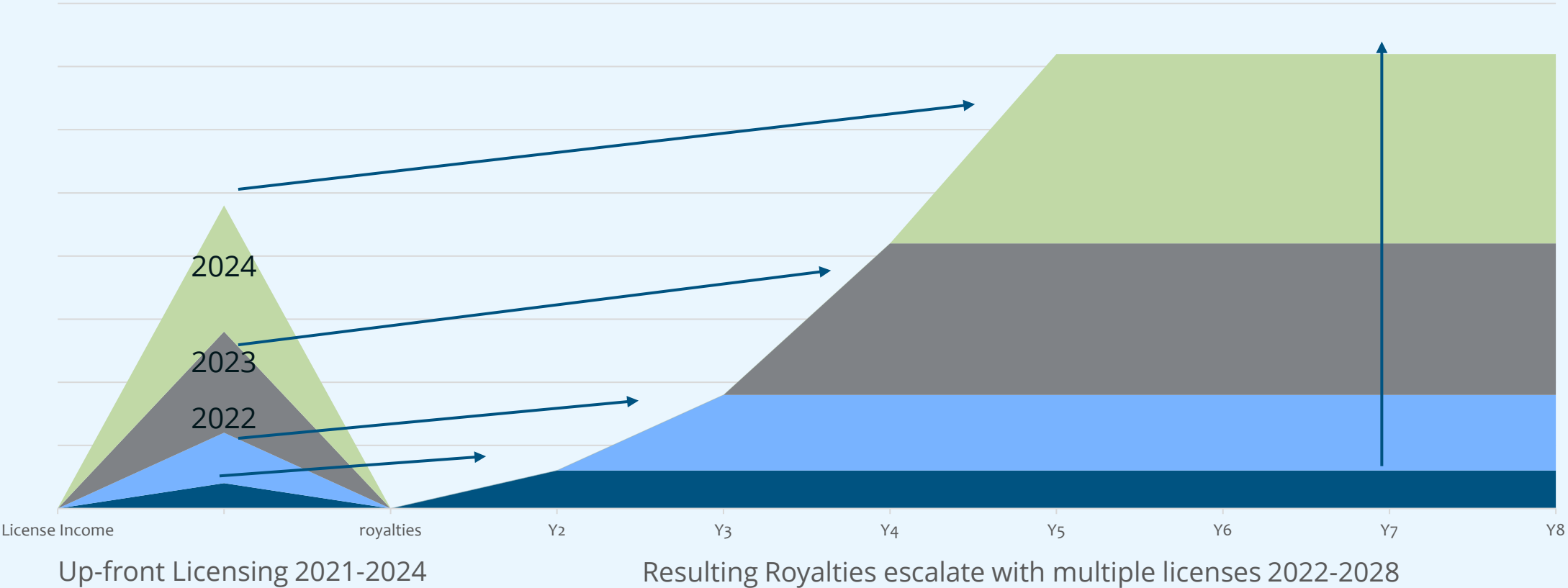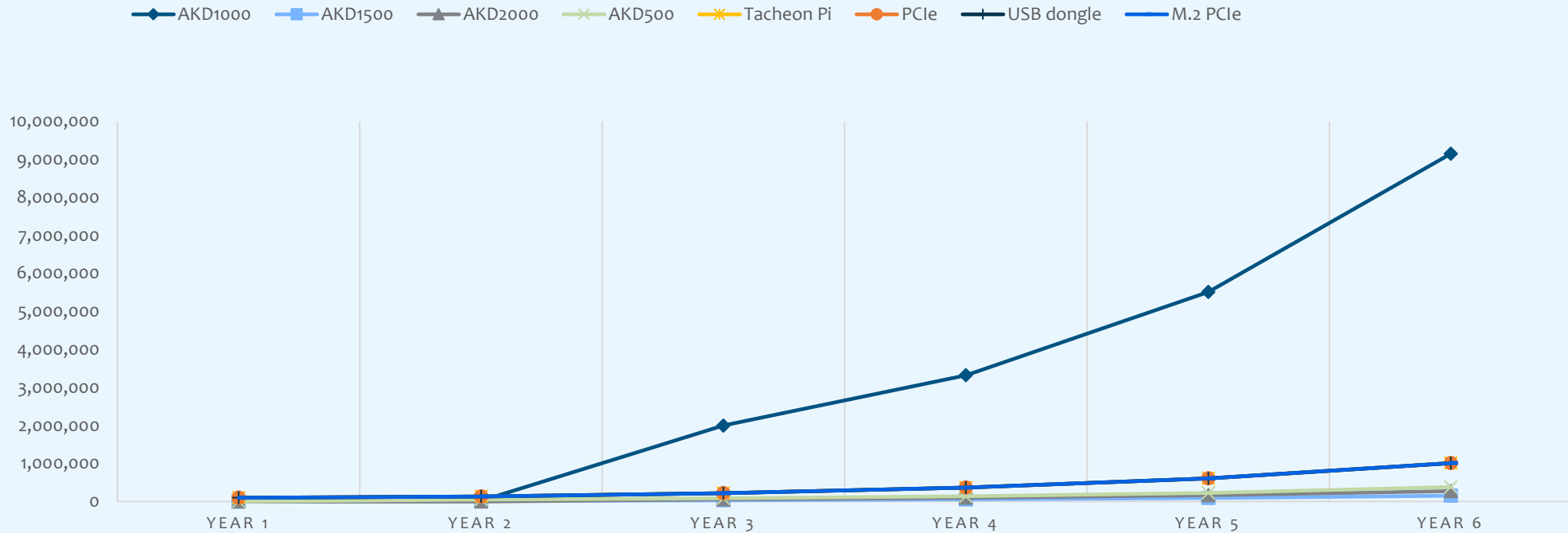
Conceptual IP Licensing and Royalties **Model**

2024

2023

2022

License Income   royalties   Y2   Y3   Y4   Y5   Y6   Y7   Y8

Up-front Licensing 2021-2024

Resulting Royalties escalate with multiple licenses 2022-2028

Conceptual Chip & Module Sales **Outlook**

Investing
in the Future

- **AKD1000**
  Advanced snn with convolution, on-chip learning, low power
  In production

- **AKD1500**
  Advanced snn with lstm and transformer networks
  In development & prototyping

- **AKD500**
  Low cost version of akd1000, consumer products

- **AKD2000**
  Optimized version of the akd1500 for lstm and transformers

- **AKD2500**
  Advanced snn for capsule networks and htm

- **AKD3000**
  Optimized akd2500 for recurrent cortical networks, capsule networks and htm

- **AKD4000**
  Cortical network processor with non-volatile memory

Investing
in People

Investing in the
**RIGHT PROCESSES
AND VALUES**
for attracting
and retaining
THE RIGHT PEOPLE

- New CEO search

- Atract additional New Board Members

- Growth of Sales and Marketing

- Growth of Engineering and Product Development

- Growth of Business Operations

BrainChip
Investor Relations

- ASX 300 Index

- OTCQX Listing

- Opening the door for institutional investors

- Improving Communication with investors

- Appointed new Investor Relations Manager

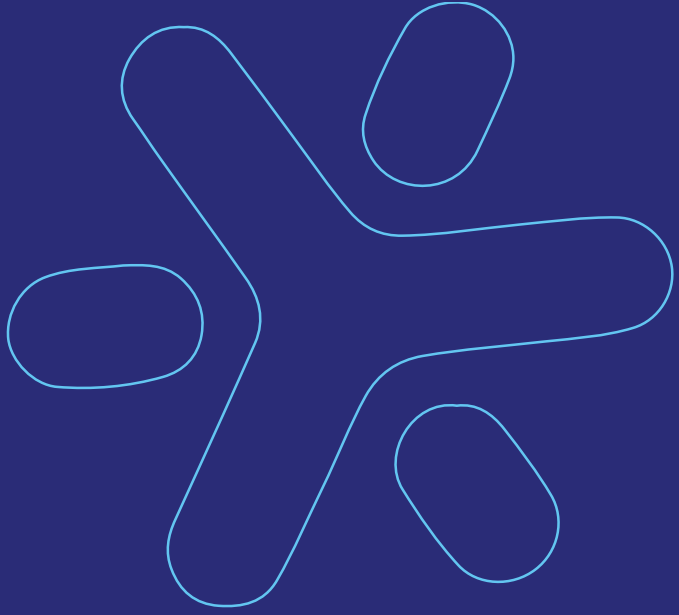# Summary: Unlocking the **Future** of AI

We don't make the sensors
WE MAKE THEM INTELLIGENT
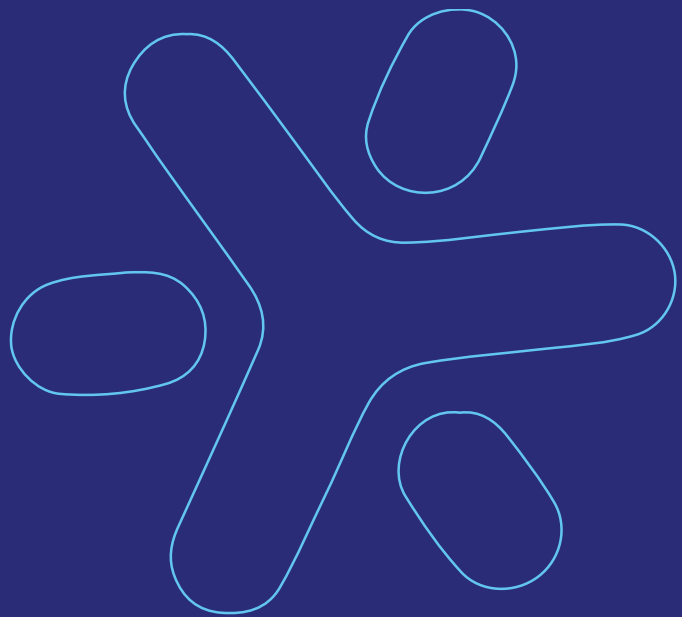
We don't add complexity
WE ELIMINATE IT

We don't waste time
WE SAVE IT

We solve the tough
Edge AI problems
**OTHERS DO NOT
OR CANNOT**

Questions

Thank you

brainchip™