

# BraneCell

## Molecular Qubits

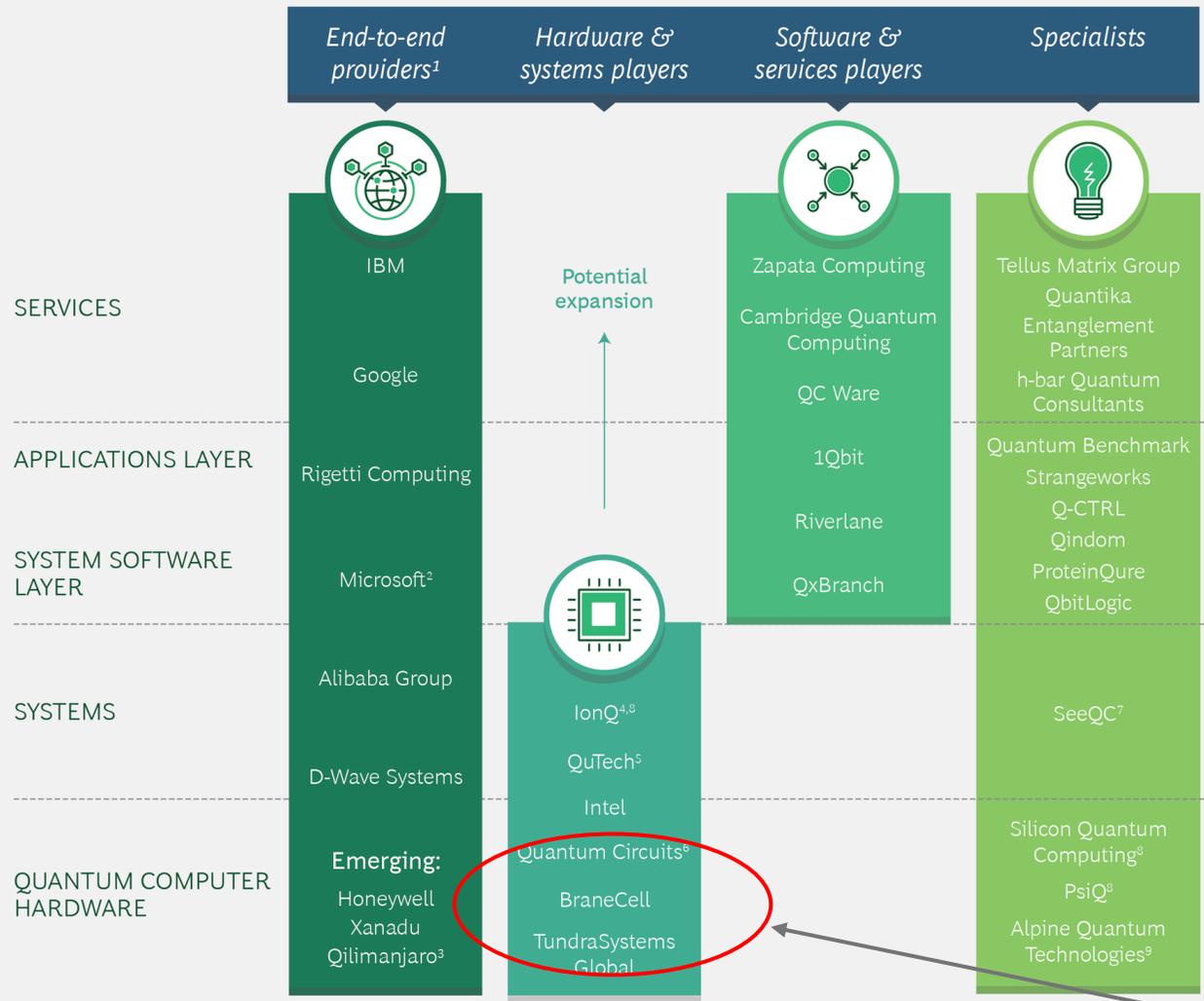
A new basis for Quantum AI, Radar and Unhackable Communications

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Introduction PDF

2/20/2026

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## Summary

**Established Brand**  
*(See [Appendix.](#))*

**Early Quantum Hardware Patents**  
*(Priority date 2012.)*

**Experienced Team**  
*(Credentialed and practical.)*

**New Edge-capable Qubits**  
*(Quantum-advantaged AI, QPU, QSDC, Q-Radar.)*

*(Excerpt from Boston Consulting report)*

Sources: Quantum Computing Report (quantumcomputingreport.com); BCG analysis.

<sup>1</sup>Based on player's ambition with varying levels of maturity and service activities.  
<sup>2</sup>Multiple technologies in the labs with focus on topological qubits.  
<sup>3</sup>Qilimanjaro is a spinoff from the University of Barcelona.  
<sup>4</sup>AWS is invested in IonQ.  
<sup>5</sup>QuTech was founded by TU Delft and TNO, and has collaborations with Intel and Microsoft.  
<sup>6</sup>Quantum Circuits (qci) is a spinoff from Yale University.  
<sup>7</sup>SeeQC is a subsidiary of Hypres.  
<sup>8</sup>Vision to become end-to-end provider.  
<sup>9</sup>Alpine Quantum Technologies (AQT) is a spinoff from University of Innsbruck.



# The Problems with today's AI, Quantum Chips and Quantum "Sight"



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## ✓ Radar and Spatial AI

- 1. Adversarial stealth fighters may avoid our conventional Golden Dome radar, especially in Arctic
- 2. Current sensors not able to use "the world" as AI training data.
- 3. Competitors' quantum anything (too big and too cold) to put onboard (aircraft, trucks, robots...)

## AI

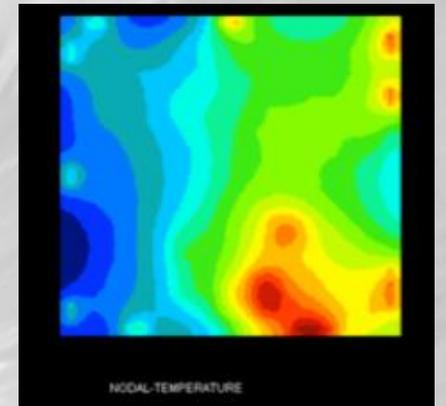
- 1. Excessive heat-up, internal temperature gradients lower (40 %) chip life in 24/7 cloud use
- 2. Excessive investment cost in new fabrication facilities
- 3. Oligopoly
- 4. Energy consumption, while AI Chips in use, ultimately hurts nature and people

## Quantum Chips

- 1. Single photon gate operations are delicate
- 2. Cold temperatures or large footprints---competition not edge capable
- 3. Specific applications provide exponential speedup (many apps not accessible)



Stealth 歼-35



Conventional AI Chip  
internal local heating

# Solved by BraneCell Qubits

BraneCell

Our molecular qubits operating particularly in correlated-topological (or quantum-gate) mode solves the challenges and expands the markets.

# Quantum Machine Learning (QML) and BraneCell

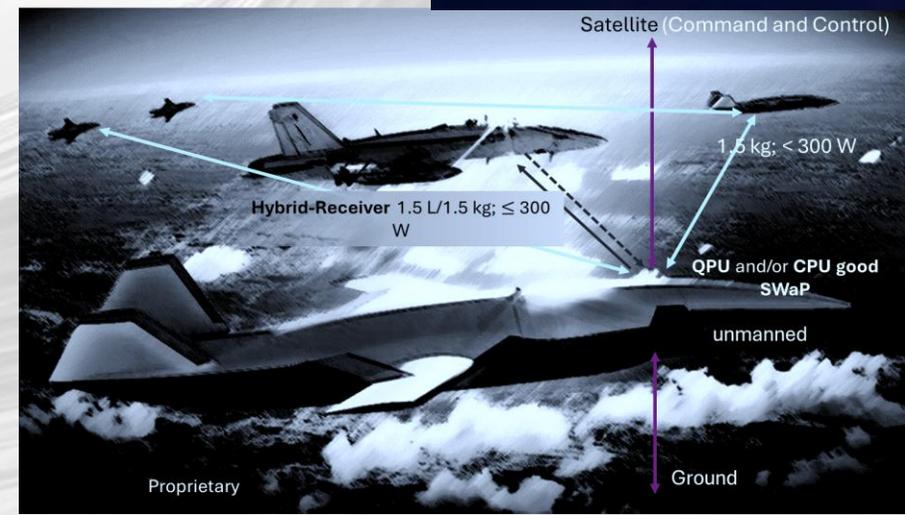
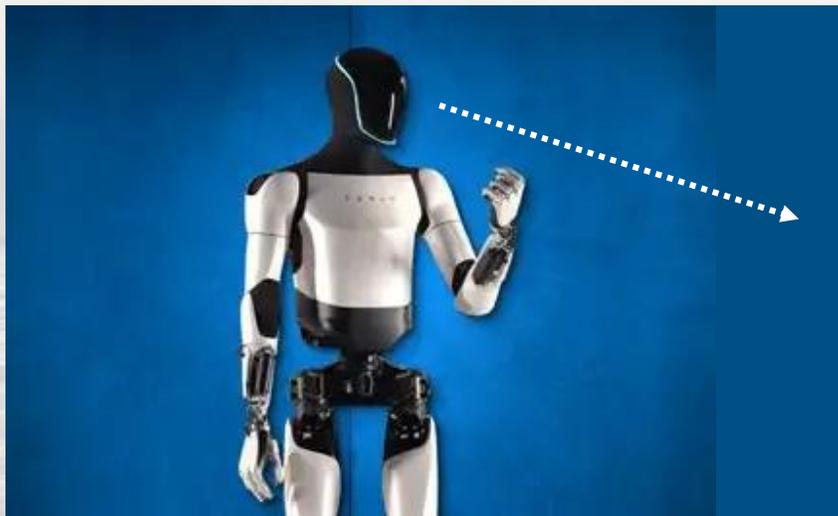
Unlike semiconductor-based AI, BraneCell's QNN, QML hardware:

- Better information density [1]
- Non-self-heating QNN [4]
- Potentially much-lower power consumption
- May train quicker [IBM, 2]
- AI with quantum combination is better. [Microsoft, Xanadu, IonQ, 2025 Congressional Reports [5]]
- Our approach may circumvent vanishing gradient issue [3]
- Low investment for a Fab facility
- Inter-AI-chip communications by BraneCell qubit QSDC
- Gate-based QPU possible
- Quantum reservoir neural network, may provide quantum *automata* signatures

# Significant Commercial Dual Use

## *Quantum Eyes and Communications/Data-Transfer*

- Robots (w/ low power consumption) [\$ 14 Billion (2034)]
- Autonomous Vehicles Commercial [\$ 4 Billion (today) 25 % CAGR]
- Drones (military and commercial)
- War on drugs Law Enforcement Q-Radar
- Sensitive Chemical safety leak sensors
- Quantum communications (QSDC)
  - i. Banking
  - ii. Defense
  - iii. Against PQC (Post Quantum Encryption)





# Smaller than Classical Warmer than Quantum

<b>BraneCell Approx. 110 X smaller Node + Interconnect Feature Size</b>		
	Interconnect + Node (nm <sup>2</sup> )	BraneCell shrinkage (improved density)
<b>BraneCell</b>	9	1
<b>3 nm, Samsung</b>	1,010	<b>1/112</b>
<b>5nm, Classical</b>	1,530	<b>1/171</b>

-We can fit our complete quantum network on their chip replacing only 2 of their transistors.

-We have quantum properties at ambient temperature.

# New Class of Material for Quantum Information Processing

BraneCell

## Our Materials:

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Low Cost

Abundant in the USA

No disposal issues

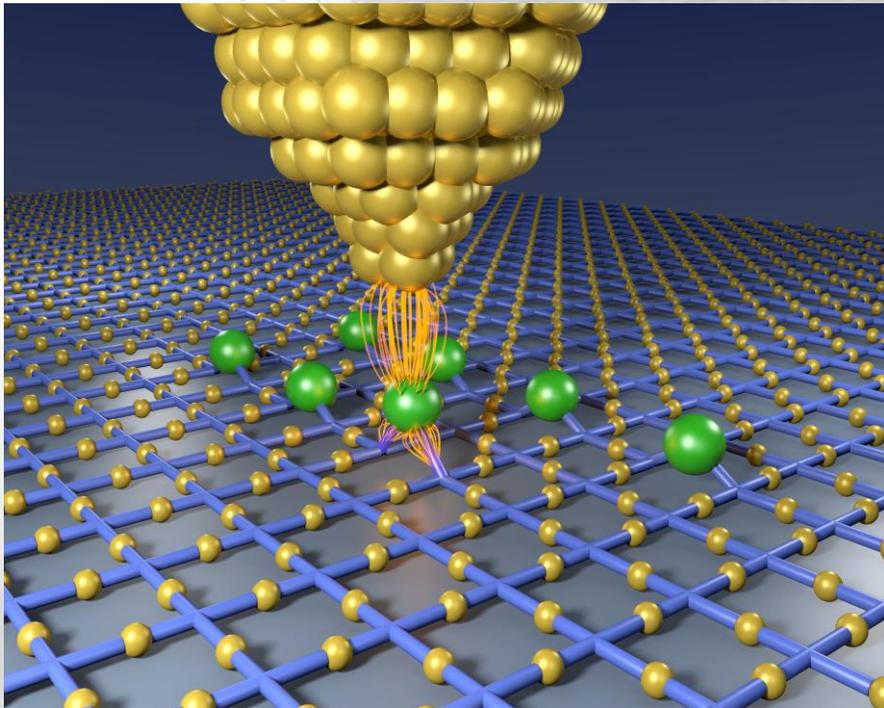
No heat degradation

*Quantum biomimetic.*

BraneCell Proprietary

# We will Onshore the Neural Network Fab at 1/100<sup>th</sup> CAPEX

BraneCell

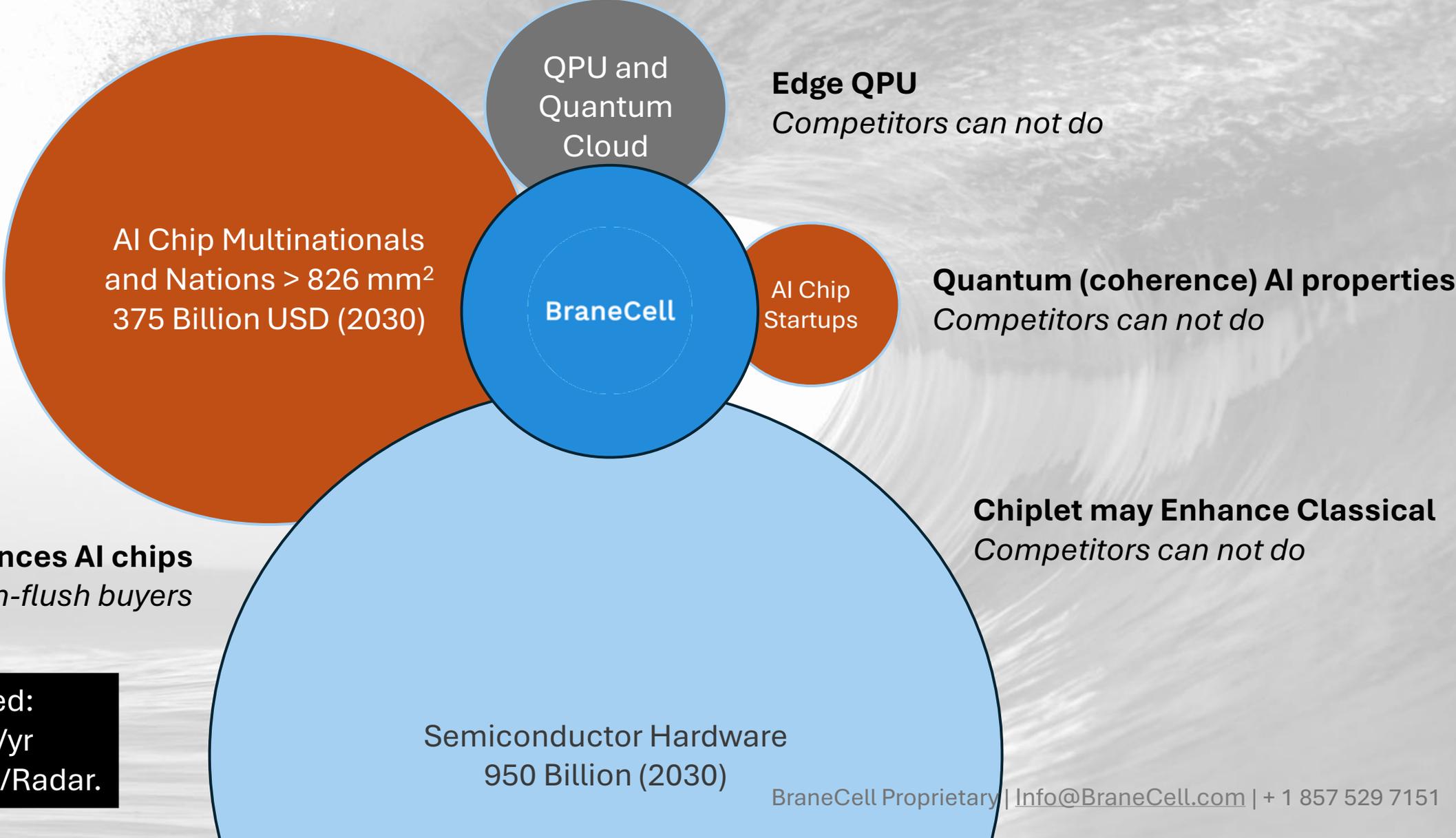


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*Surface of molecular placement*

Development of the newest methods in Atomically Precise Manufacturing (APM) changes the game of chip fabrication, from a > \$ 8 Billion CAPEX to a < \$ 80 Million Fab facility (at same \$/chip, lower throughput per facility). Such Fabs can be distributed/decentralized and application-specific, tailor-made quantum AI chips. This is the frontier of AI chip manufacturing.

Taking a portion of existing chip markets and expanding the QPU, AI and semiconductor chip markets.



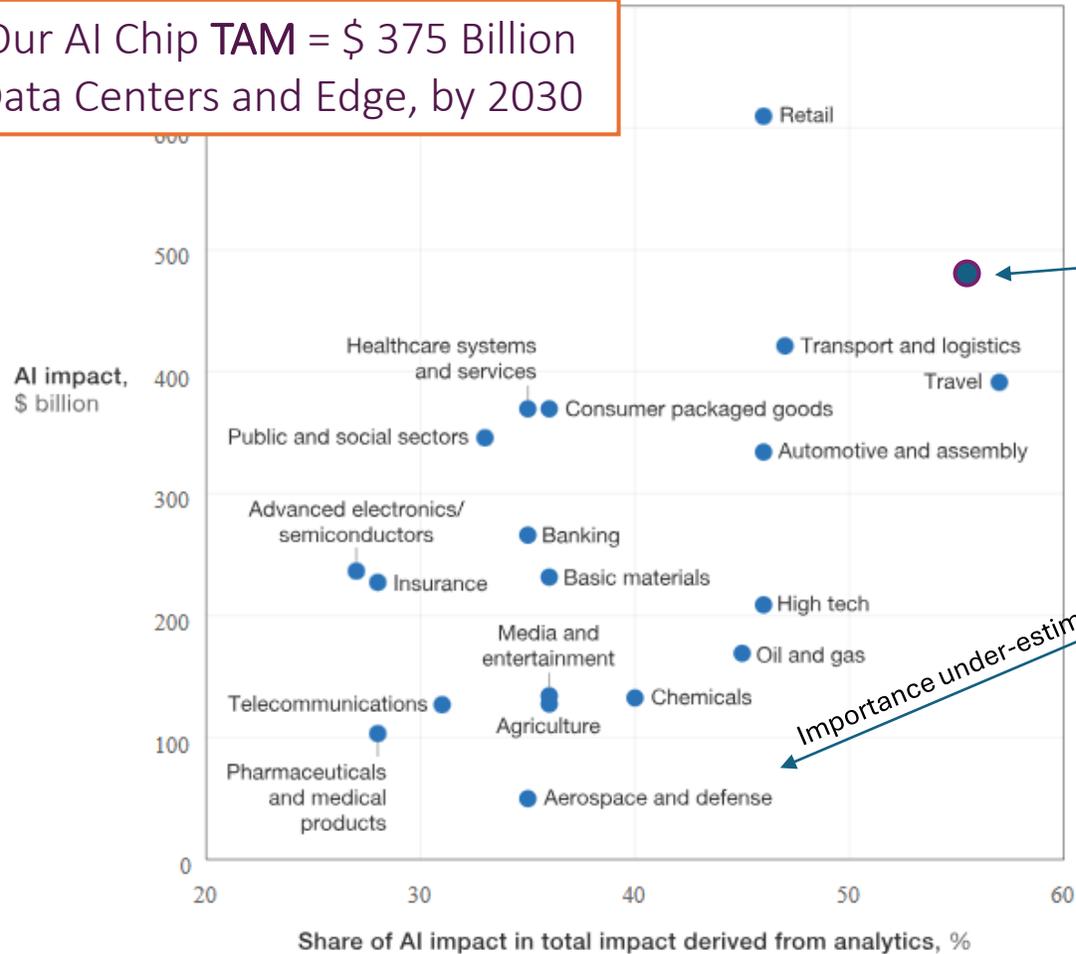
Not depicted:  
\$ 50 Billion/yr  
Quantum LiDAR/Radar.

# Markets: Big Revenue and Big CAGR



Artificial intelligence (AI) has the potential to create value across sectors.

Our AI Chip TAM = \$ 375 Billion  
Data Centers and Edge, by 2030



NLP \$ 49.4 Billion,  
CAGR 25.7



Importance under-estimated by McKinsey

# Key BraneCells

BraneCell



Christopher Papile, Ph.D.



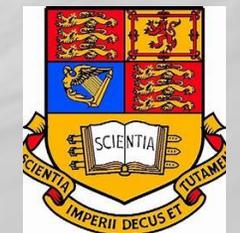
Lauren Sammes, Ph.D.

## Inventor and Investor

- Advisor to the leadership of **PsiQuantum**
- Global Head ThyssenKrupp New Technology Task Force; we did an IPO, became **TK Nucera** (XETR:NCH2)
- Led part R&D **ExxonMobil**/Technip 50/50 JV, developed billion-dollar product, BPA.
- Co-started Arthur D. Little's spinout (**Nuvera**), a startup that became today's established, profitable company.
- Co-started, from Novartis, **Solvias** AG, a startup that became established company that is still successful today.
- Offered a solution to the oldest (150-year-old) Quantum Paradox, *Loschmidt*
- Won & Principal Investigator for \$ 28 Million federal grants; > 60 patents & scientific peer-reviewed articles.
- **Ludwig-Maximilians-Universität**, **NATO**, **U. of Delaware Ph.D.**, research precise atomic structures on surfaces, **Brookhaven National Lab Synchrotron Light Source**.

## SVP Materials

- Distinguished and Chaired Professor **Colorado School of Mines**
- Chaired Professor **University of Connecticut**
- Co-founder and CTO of **LERC**, the start-up raised \$ 43 Million
- Previous **Max Planck** Alexander von-Humboldt Fellow
- Frequently USA Grant Principal Investigator
- Visiting scholar in S. Korea, Japan, Germany (world-class scientist)
- > 200 peer-reviewed scientific publications; Ph.D. **Imperial College, London**.



# BraneCell

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HUBZone

Dr. Lauren Sammes  
Dr. Christopher Papile  
and BraneCells (team)

For qualified investors only.

***Proprietary  
Starter PDF***

*Quantum and AI*

*Den Haag*

*Award-1*

*Award-2*

*Seminar series Universität Düsseldorf*

*Links-1*

*Links-2*

*Links-3*

*Links-4*

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[www.BraneCell.com](http://www.BraneCell.com)

## Selected Brand Links

(2) BraneCell (@BraneCell) / X	Twitter
(8) Post   Feed   LinkedIn	Dr. Papile speaking at Universität Düsseldorf, Institut für Theoretische Physik
IQT Europe Announces Dr. Papile, CEO of BraneCell, Will Speak on ‘Quantum Chips, Quantum Memory and Quantum Materials’ Panel 10/29 - Inside Quantum Technology	Dr. Papile speaking at IQT, The Hague, Netherlands
BraneCell on X: "Come join the fun and the future! Panel is in 2 hours. #Zukunft #KuenstlicheIntelligenz #Duesseldorf #Industry40 #Deutschland #California" / X	Keynote Speaker at the Artificial Intelligence Conference, AI in Quantum Computing
PMI-KSA-20181219-AwardCeremony-DrChristopherPapile.mp4	Dr, Papile for quantum computing in Saudi Arabia
<a href="https://t.co/7UTXTy2HXn">https://t.co/7UTXTy2HXn</a> / X	BraneCell award received in Saudi Arabia
PMI - KSA Symposium on X: "#المشاريع اداره مؤتمر# 2018 <a href="https://t.co/modYxWkZtq">https://t.co/modYxWkZtq</a> " / X	Dr. Papile speaking in Saudi Arabia
<a href="https://www.dropbox.com/scl/fi/uyotkcbn40pk938innrp7/Lockheed-examination-of-BraneCell.pptx?rlkey=lc27nr9prihiklnwg5h52rox&amp;st=e9p1wnh4&amp;dl=0">https://www.dropbox.com/scl/fi/uyotkcbn40pk938innrp7/Lockheed-examination-of-BraneCell.pptx?rlkey=lc27nr9prihiklnwg5h52rox&amp;st=e9p1wnh4&amp;dl=0</a>	Lockheed Martin working together email, with permission to show.
<a href="https://www.dropbox.com/scl/fi/oy1g9ojo76yla8mhi78dq/PIA-3610_BraneCell-affiliate-Catalyte.doc?rlkey=0h0z96zaraygef15luvq6adj0&amp;st=hqnsk9zr&amp;dl=0">https://www.dropbox.com/scl/fi/oy1g9ojo76yla8mhi78dq/PIA-3610_BraneCell-affiliate-Catalyte.doc?rlkey=0h0z96zaraygef15luvq6adj0&amp;st=hqnsk9zr&amp;dl=0</a>	Lockheed Martin NDA
AST's Partnership With BraneCell, LLC Extends Benefits Received from Improved Information Processing Technologies – Allegheny Science and Technology	BraneCell and AST (women-owned Federal contractor)
AST and BRANECELL Announce Their Partnership to Improve Critical Government Functions Through the Power of Quantum Computing – Allegheny Science and Technology	BraneCell partnership with AST
BraneCell Presents On-location Quantum Processors for Chemical, O&G and Industry 4.0	Announcing new BraneCell partner
Natural Quantum: Science, Paradigms and Products   by BraneCell Systems   Medium	BraneCell Medium post
BraneCell Systems – Medium	7 Medium posts by BraneCell
BraneCell   VentureRadar	Venture Radar
BraneCell   Morgantown, WV, USA Startup	GUST Profile a year out of date
BraneCell Systems Presents Distributed Quantum Information Processing for Future Cities	BraneCell Dubai, UAE, guest speaker and press release.
Digital-catalysts for Chemical, Energy and O&G   by BraneCell Systems   Medium	Medium, Chemical, Oil and Gas Industry Applications for Quantum Computing
Digital Transformation and Quantum-DX for EPC   by BraneCell Systems   Medium	Quantum computing for the EPC industry
BraneCell: Overview   LinkedIn	BraneCell LinkedIn
(8) Post   Feed   LinkedIn [year 2024]	Dr. Papile remote server and data center power.
<a href="https://www.dropbox.com/scl/fi/v68ej1p5kisi7cgthokuz/BCG-Graph-BraneCell.png?rlkey=yxbfjxwodrf3rrwiwcqj8sh&amp;st=3qk2cx6i&amp;dl=0">https://www.dropbox.com/scl/fi/v68ej1p5kisi7cgthokuz/BCG-Graph-BraneCell.png?rlkey=yxbfjxwodrf3rrwiwcqj8sh&amp;st=3qk2cx6i&amp;dl=0</a>	BCG Lists BraneCell, a quantum hardware company to watch.