

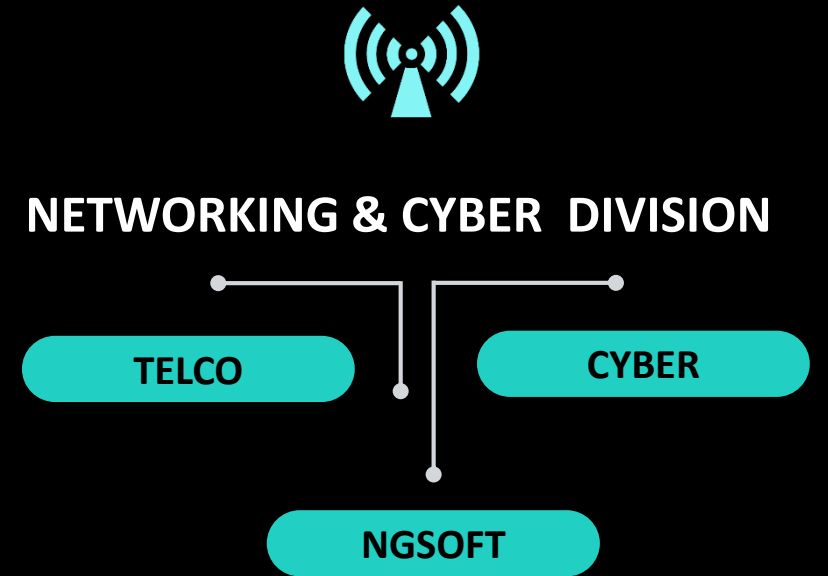
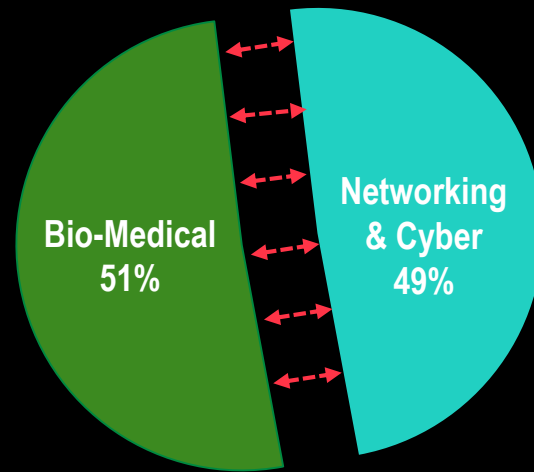
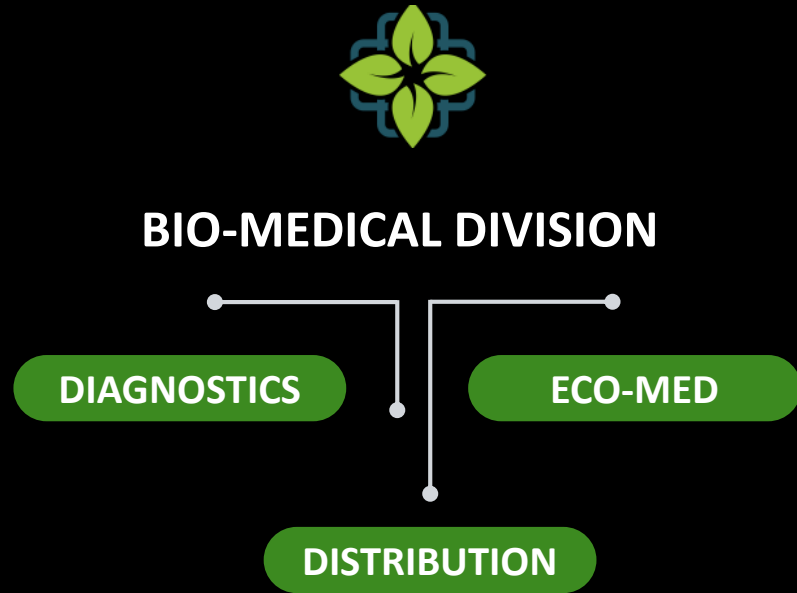
BATM

Capital Markets Day

November 2018



Company Structure





BIO-MEDICAL DIVISION

DIAGNOSTICS

ECO-MED

DISTRIBUTION





NETWORKING & CYBER DIVISION

TELCO

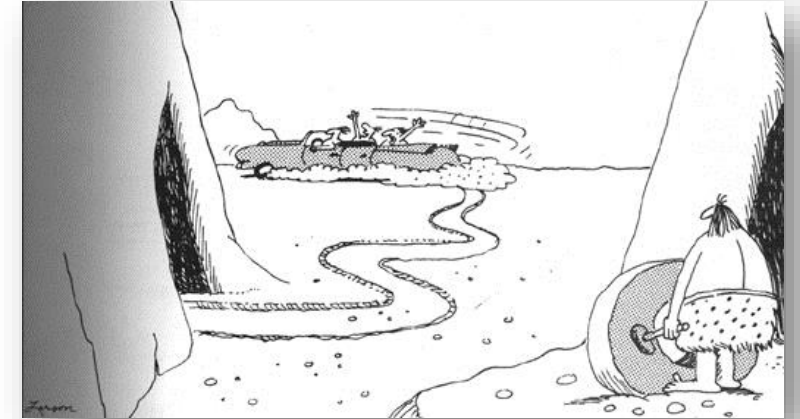
CYBER

NGSOFT



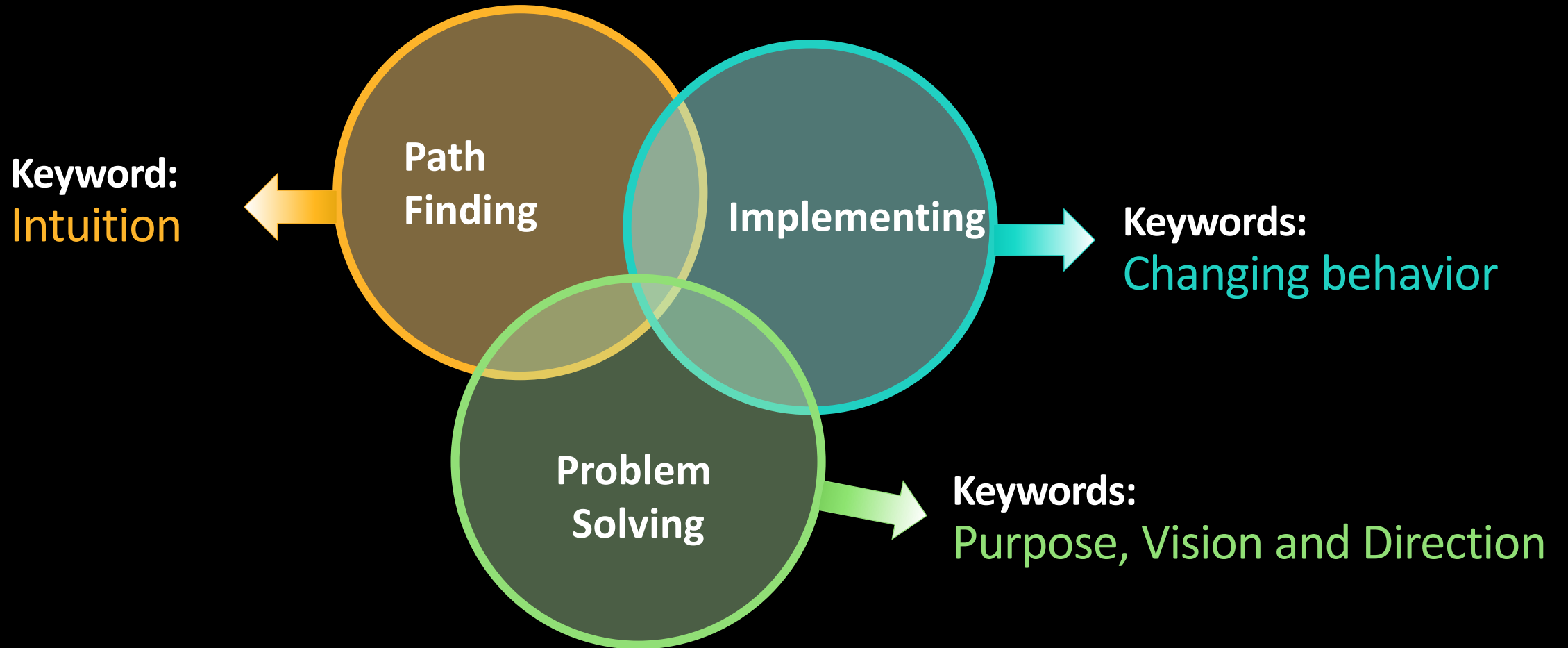
BATM Overview

- Technology-driven company that turns science into technological innovation
- Specializing in two areas:
 - Networking and Cyber
 - Bio and Eco-Med
- Expertise in algorithms, software development, etc. enables innovation with minimum expense and risk in both divisions
 - E.g. cyber and molecular biology share 'finding a needle in a haystack' algorithms, deep learning etc
- Seek to find the best vision and path for future technologies (as has been proven several times)
- Management seeks to build a "company to last" while creating best value for shareholders, employees and community



**Choosing Future Technologies
Vision + Technical Understanding**

Building a Company Strategy

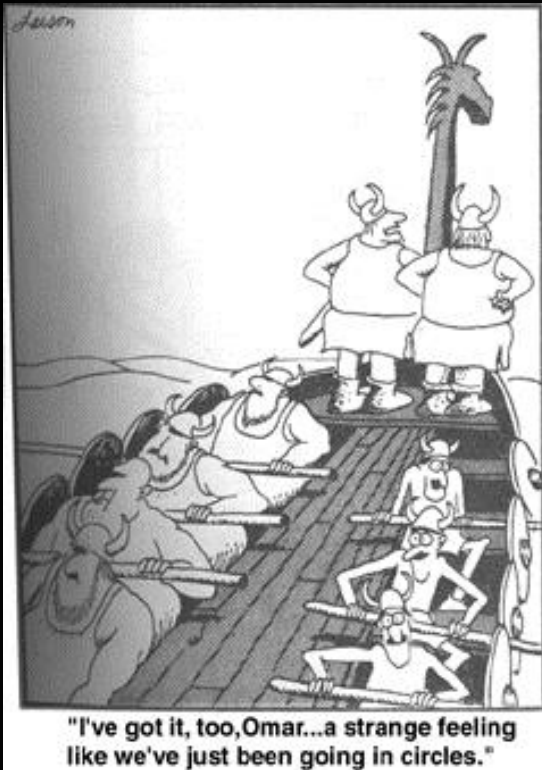


Key 2019 Targets

- Sustain organic growth
- Two divisions – profitable, all financial parameters continue improvement
- Add multi-year, multi-million contracts in both divisions, with Tier 1-3 customers
- Bio-Medical division start introduction into US market
- Continue to examine and introduce innovative technologies and products in both divisions
- Look for business opportunities to increase growth



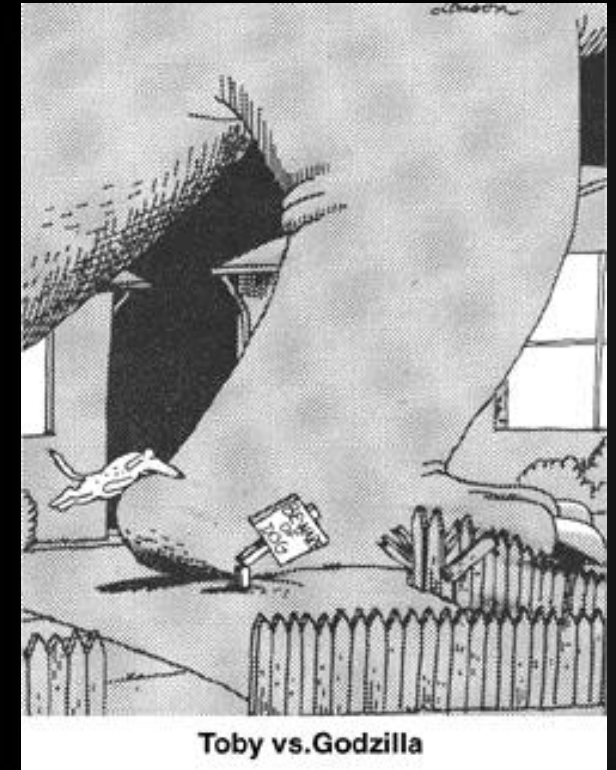
**Maintain focus and balance
in the company**



**Maintain orderly processes in the both
divisions**



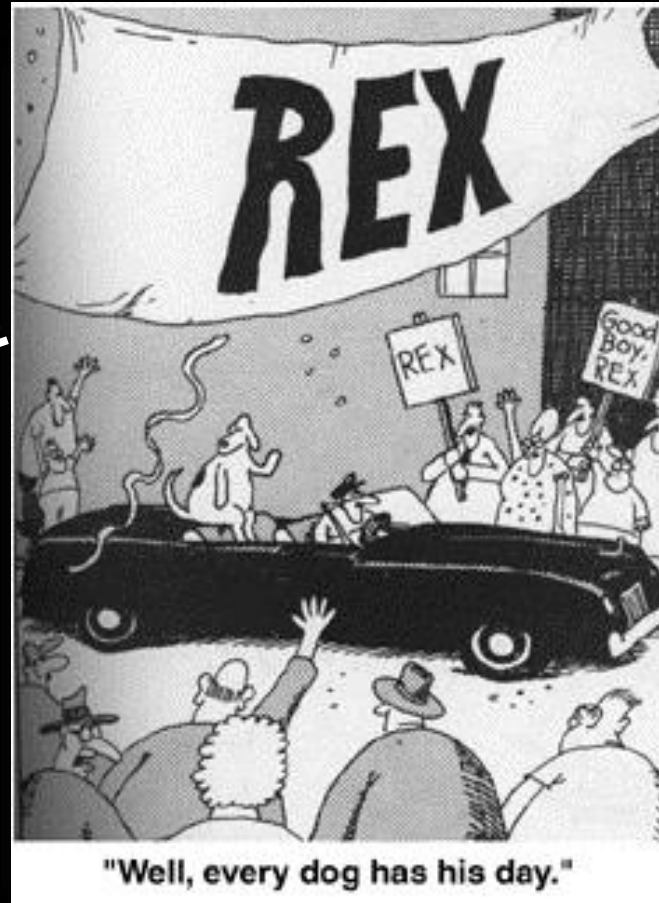
**Look for potential
competition**



If all goes well...



**BIO-MEDICAL
DIVISION**



**NETWORKING
& CYBER DIVISION**

Schedule for the Day

- 9.30** **Introduction: Overview of the Day and Group Strategy**
Dr Zvi Marom, Founder and Chief Executive Officer
- 9.40** **Diagnostics – Medical Laboratory Systems**
Dr Zvi Marom
- 10.10** **Eco-Med – Advanced Bio-Waste Treatment and Sterilization Solutions**
Ofer Barner, Chief Operating Officer of Eco-Med unit
- 10.40** **Coffee break**
- 10.55** **Network Edge Innovation**
Ariel Efrati, Chief Operating Officer of Networking Division and Chief Executive Officer of Telco Systems
- 11.25** **Presentation by Arm on NFV Ecosystem**
Colin Alexander, Head of Arm Wireless Marketing Infrastructure
- 11.40** **Cyber Security, Network Visibility and Monitoring**
Avi Cohen, Chief Executive Officer of Cyber unit, Celare
- 12.10** **Conclusion**
Dr Zvi Marom
- 12.20+** **Questions & Answers followed by lunch**



THINK DIFFERENT



THANK YOU

Visit our new website

WWW.BATM.COM

BATM DIAGNOSTIC SOLUTIONS

ADOR
D I A G N O S T I C S

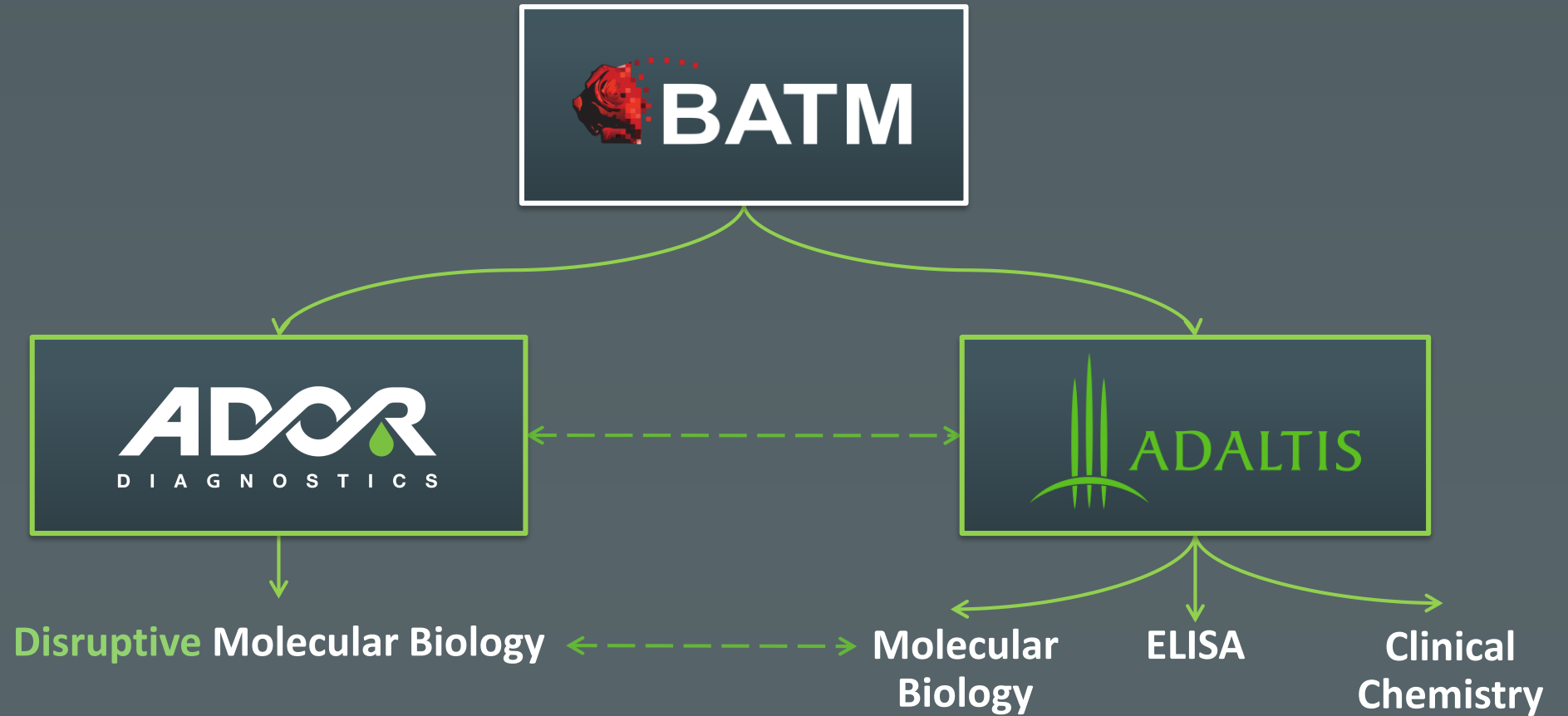
ADALTIS

RELIABILITY & INNOVATION



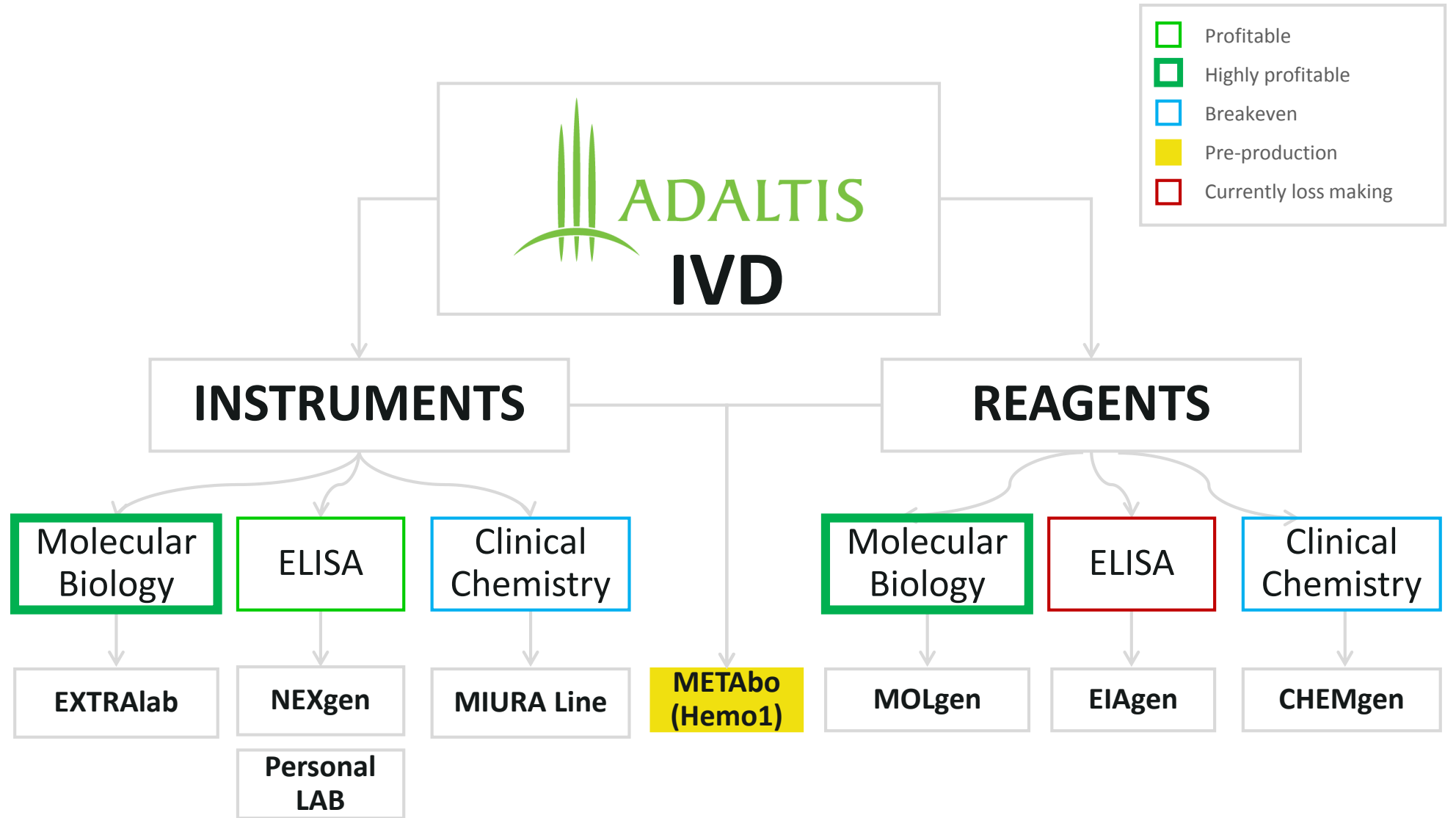


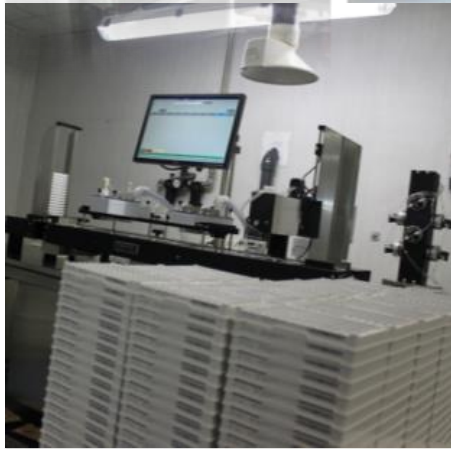
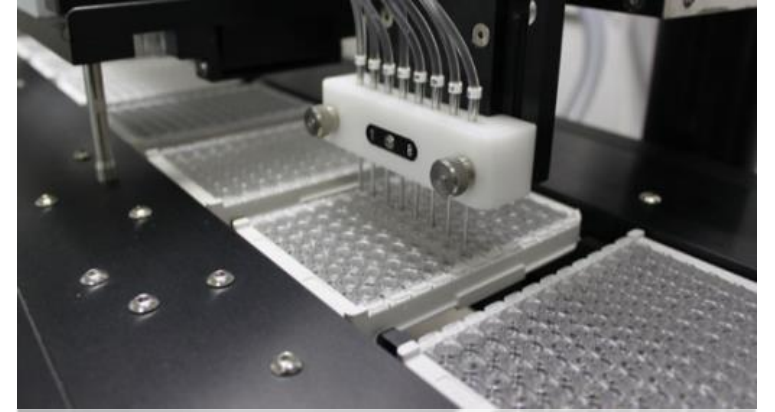
DIAGNOSTIC DIVISION STRUCTURE





IVD SYSTEMS & CLINICAL DIAGNOSTIC SOLUTIONS
MICROELISA - CLINICAL CHEMISTRY - MOLECULAR DIAGNOSTICS - NAT





MOLgen Menu

MOLECULAR DIAGNOSTIC PANELS and REAGENT KITS for NUCLEIC ACID EXTRACTION and RT-PCR of INFECTIOUS DISEASES and GENOMICS



Universal Extraction

Human Immunodeficiency Virus (HIV)

Hepatitis A, B, C, D, G

Tuberculosis

ToRCH Infections

Tick-borne Infections

Gastrointestinal Infections

Human Papilloma Viruses (HPV)

Sexually Transmitted Infections (STI)

Multiplex Detection of STI

Herpes Viruses

Vaginal Biocenosis and Microflora

Candidiasis

Genetics (for SNP Detection)

EXTRAlab

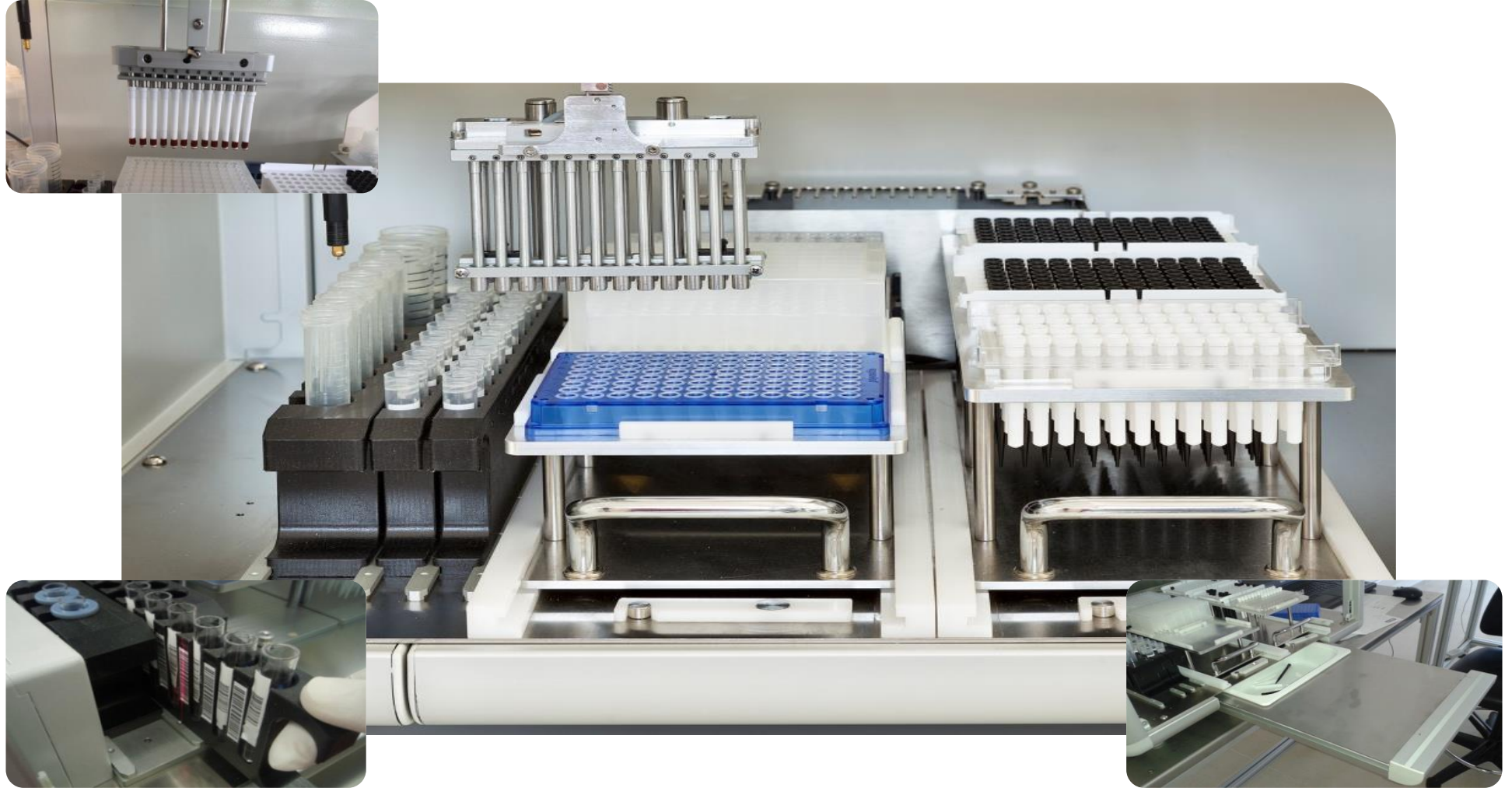


**Fully-automated
Molecular Diagnostics Platform**
An automated working platform for
liquid handling, extraction/purification
of nucleic acids and PCR setup



RELIABILITY & INNOVATION

EXTRA lab



EIAgen

MicroELISA Blood Bank Assays Menu



HIV Ag/Ab

HCV

HBsAg

HTLV I/II

Syphilis

(CMV)

CE - IVD

Kit Format:

96 / 192 / 480 tests

FULLY AUTOMATED POINT OF CARE

**THE PERFECT SOLUTION
FOR RAPID & ACCURATE
DIAGNOSIS**

Specially designed for small to mid-sized laboratories, doctor offices, specific hospital settings, (rural) labs and mobile care units.

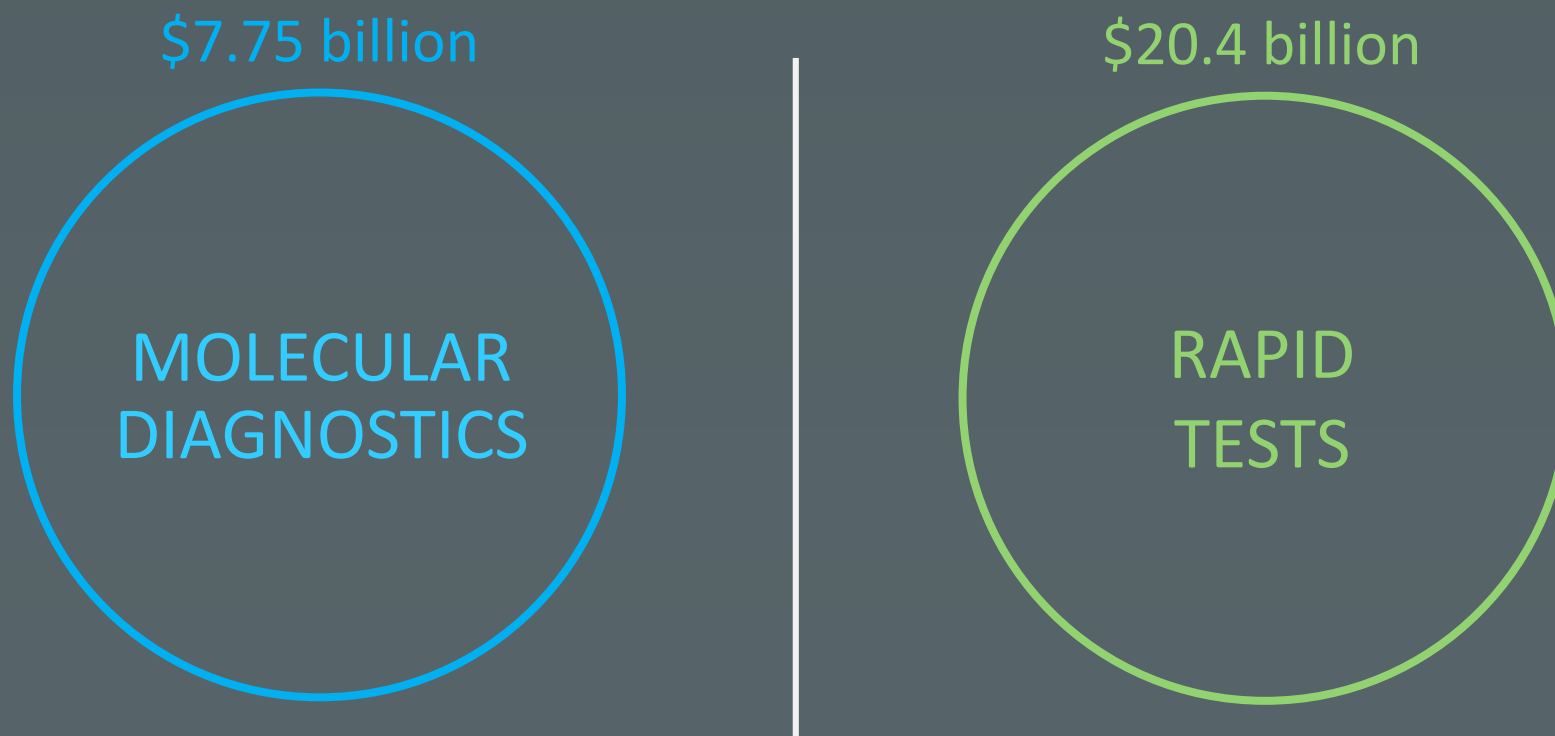
Hema One





ADOR POTENTIAL MARKETS

The molecular diagnostics and rapid tests markets are defined by different technologies. Typically, diagnostics players are oriented towards one or the other. Ador's unique technology enables engagement with both.



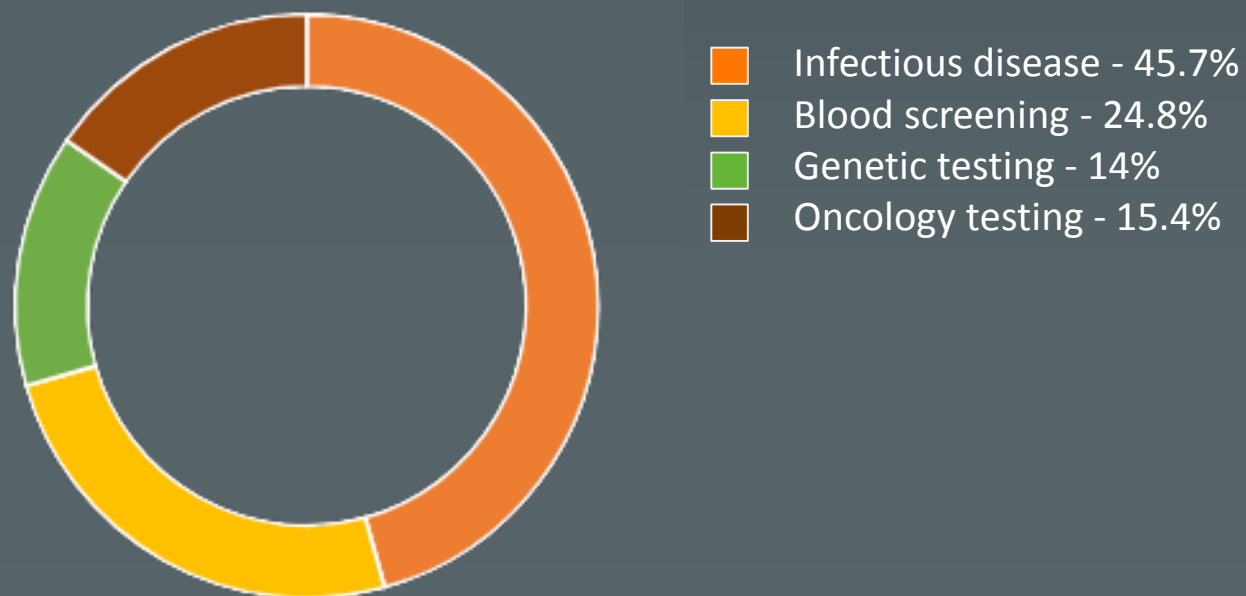
ADOR POTENTIAL MARKETS: MOLECULAR DIAGNOSTICS

MARKET SIZE

2017 - \$7.75 billion | prediction: \$12.7 billion by 2024 | (CAGR) 8.4%

(“Molecular Diagnostics Market Report, 2024” | Global Market Insight, 2017)

MARKET SEGMENTS



(“Molecular Diagnostics Market Report, 2024” | Global Market Insight, 2017)

ADOR POTENTIAL MARKETS: **MOLECULAR DIAGNOSTICS**

PROS

*“Extreme accuracy, precision: high sensitivity and specificity assays approaching **100%**.”*

(Bioscience Horizons: The International Journal of Student Research, Volume 9, 1 January 2016)

CONS

- **DNA extraction is needed** in order to perform diagnosis
- Time from Sample to answer (how long until you get answers):
between a couple of **hours** (PCR) to a few **days** (NGS - next generation sequencing)
- **Expensive** tests - *“Increasing utilization of molecular diagnostics has led to upsurge in its costs..... A study indicates that, gene sequencing test cost around USD 5000 to USD 10,000 per test which is not affordable to majority of population. Hence expensiveness of few molecular tests may act as restraining factor for market.”*

(“Molecular Diagnostics Market Report, 2024” | Global Market Insight, 2017)



UNIQUE ADVANTAGE VIA TECHNOLOGICAL BREAKTHROUGH

Ador's unique proprietary technology combines
BOTH Molecular Diagnostics AND Rapid Tests within the SAME machine



PROPRIETARY IMAGE PROCESSING ANALYSIS

Test chamber - v1.2

Image: C:\temp\images\captured_image_636581959152056233.jpg

Selected cell 1 Type ARP X=1119,Y=646 Cells radius 4 270°

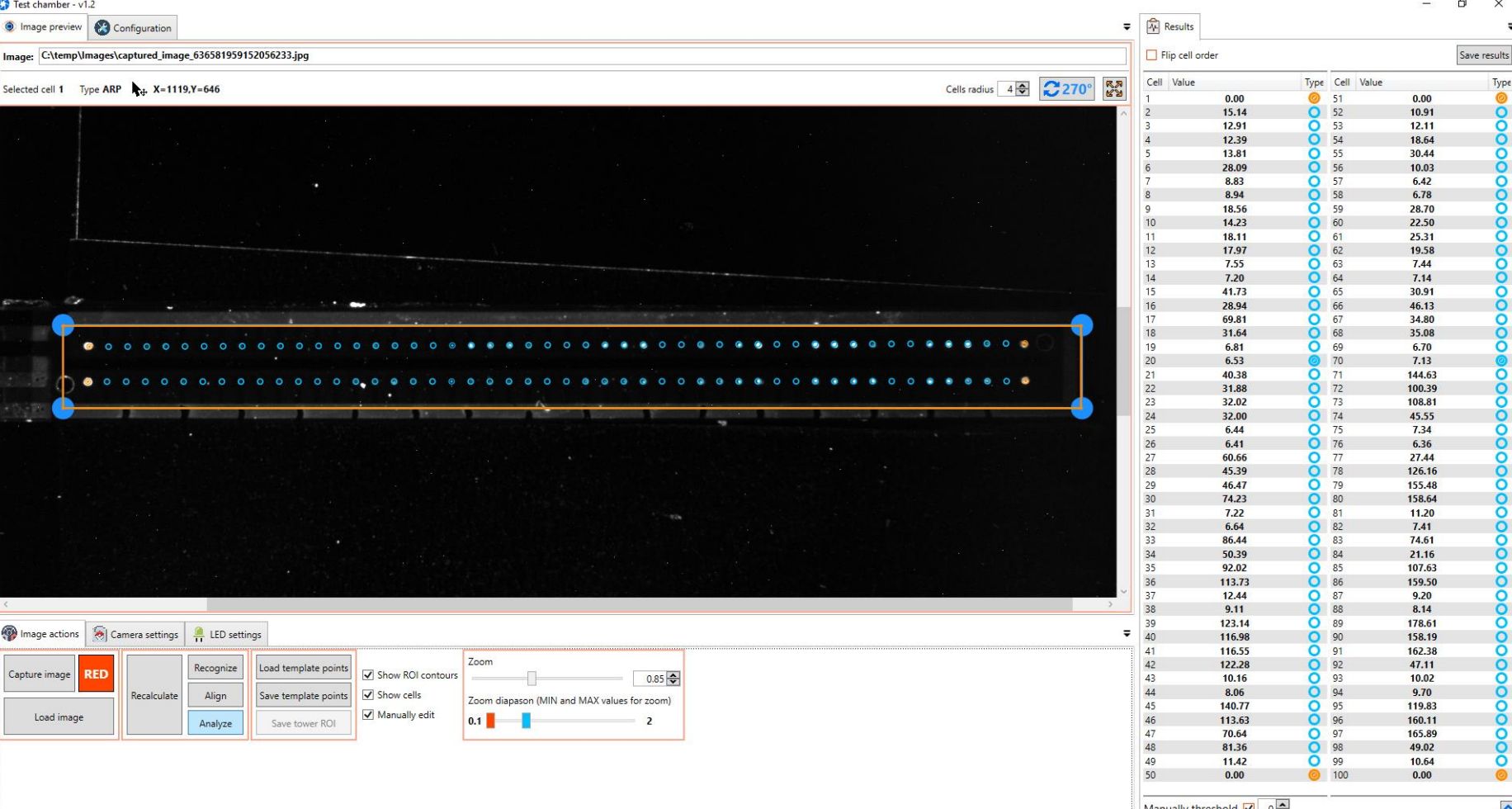


Image actions Camera settings LED settings

Capture image **RED** Recalculate Recognize Load template points Show ROI contours
 Load image Align Save template points Show cells
 Analyze Save tower ROI Manually edit

Zoom 0.85
 Zoom diapason (MIN and MAX values for zoom)
 0.1 2

Results

Flip cell order Save results

Cell	Value	Type	Cell	Value	Type
1	0.00	○	51	0.00	○
2	15.14	○	52	10.91	○
3	12.91	○	53	12.11	○
4	12.39	○	54	18.64	○
5	13.81	○	55	30.44	○
6	28.09	○	56	10.03	○
7	8.83	○	57	6.42	○
8	8.94	○	58	6.78	○
9	18.56	○	59	28.70	○
10	14.23	○	60	22.50	○
11	18.11	○	61	25.31	○
12	17.97	○	62	19.58	○
13	7.55	○	63	7.44	○
14	7.20	○	64	7.14	○
15	41.73	○	65	30.91	○
16	28.94	○	66	46.13	○
17	69.81	○	67	34.80	○
18	31.64	○	68	35.08	○
19	6.81	○	69	6.70	○
20	6.53	○	70	7.13	○
21	40.38	○	71	144.63	○
22	31.88	○	72	100.39	○
23	32.02	○	73	108.81	○
24	32.00	○	74	45.55	○
25	6.44	○	75	7.34	○
26	6.41	○	76	6.36	○
27	60.66	○	77	27.44	○
28	45.39	○	78	126.16	○
29	46.47	○	79	155.48	○
30	74.23	○	80	158.64	○
31	7.22	○	81	11.20	○
32	6.64	○	82	7.41	○
33	86.44	○	83	74.61	○
34	50.39	○	84	21.16	○
35	92.02	○	85	107.63	○
36	113.73	○	86	159.50	○
37	12.44	○	87	9.20	○
38	9.11	○	88	8.14	○
39	123.14	○	89	178.61	○
40	116.98	○	90	158.19	○
41	116.55	○	91	162.38	○
42	122.28	○	92	47.11	○
43	10.16	○	93	10.02	○
44	8.06	○	94	9.70	○
45	140.77	○	95	119.83	○
46	113.63	○	96	160.11	○
47	70.64	○	97	165.89	○
48	81.36	○	98	49.02	○
49	11.42	○	99	10.64	○
50	0.00	○	100	0.00	○

Manually threshold 0

NATlab READER

MAJOR CAPABILITIES

- **Rapid** - Sample to answer in less than 30 minutes
- **Multi-parameter** - Up to 100-plex
- **Random Access** - 3 Independent Processors, One Cartridge
- **Rapid** - Results in 15 to 90 min
- **Simple** - Hands-on time <2 min
- **Scalable** - Option to add up to 8 “Slave” Units
- **Versatile** - Multiple Sample Types
- **I/O** - Integrated Barcode reader, Touchscreen, USB, Full LIS compatible
- **Compact & Mobile** - Lab / bedside / field / mobile
- **‘Plug and Play’** replaceable towers for ease of service
- **Highly cost effective**

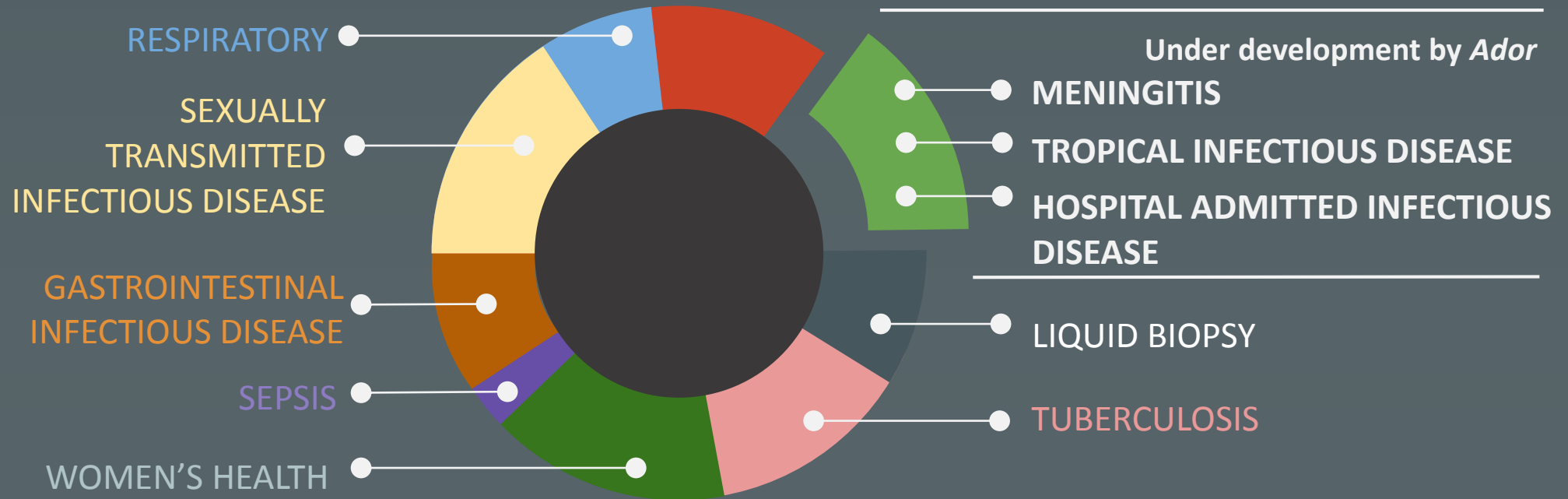


ADOR PANELS

Besides the platforms (reader machines), there is a critical development race in the market: **PANELS**

Each panel is a new potential market segment

More panels = More market segments + massive competitive edge



MENINGITIS PANEL

A “one-stop-shop” for rapid differential Dx of bacterial, viral and fungal Meningitis from a single CSF sample

Current Dx Practice:	Microscopy, culture, Manual MDx, Filmarray
Current TAT:	Hours - Days
The Need:	Rapid detection of septic and aseptic meningitis in newborns/toddlers with high fever, as well as in adults
Sample type:	CSF
Users:	Hospital labs, ER, ICU, nICU
Composition:	<ul style="list-style-type: none"> ▪ Viruses: CMV, Enterovirus, HSV1, HSV2, HHV-6, Human parechovirus, VZV, EBV ▪ Bacteria: Streptococcus pneumoniae, Haemophilus influenza, Listeria monocytogenes, Neisseria meningitides, E. coli, Streptococcus agalactiae (GBS) • Fungi: Cryptococcus neoformans/gattii





RELIABILITY & INNOVATION

INDUSTRY M&A

“Given the growth profile of the molecular diagnostics market, it has been an area of focus for deals and consolidation. Many diagnostics firms that were under-represented in this area have sought partners or acquisitions to gain exposure, reflecting the growing interest in personalized medicine.”

*(“Molecular Diagnostics Market Report, 2024”
| Global Market Insight, 2017)*

\$5.3 Billion



\$4 Billion



\$1.85 Billion



\$710 Million



\$550 Million



\$450 Million



\$410 Million



\$371 Million



\$300 Million





THANK YOU

celitron

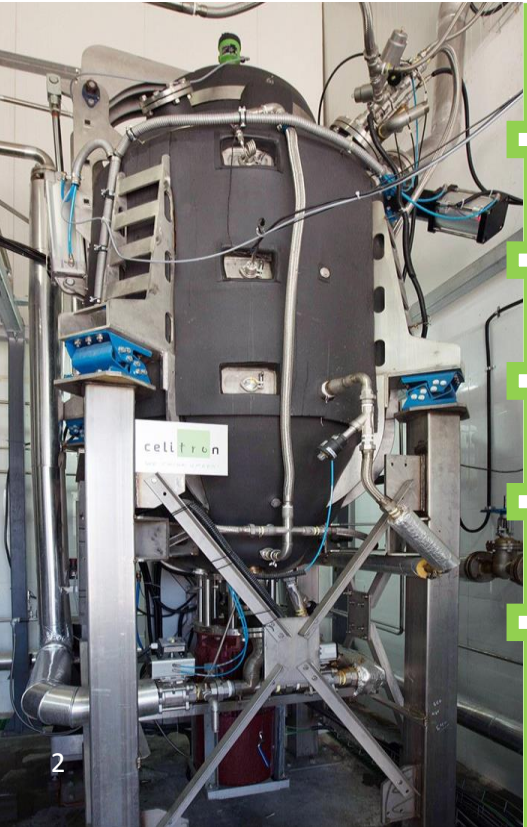
WE THINK GREEN!



Advanced Bio-Waste Treatment and Sterilization Solutions



OVERVIEW

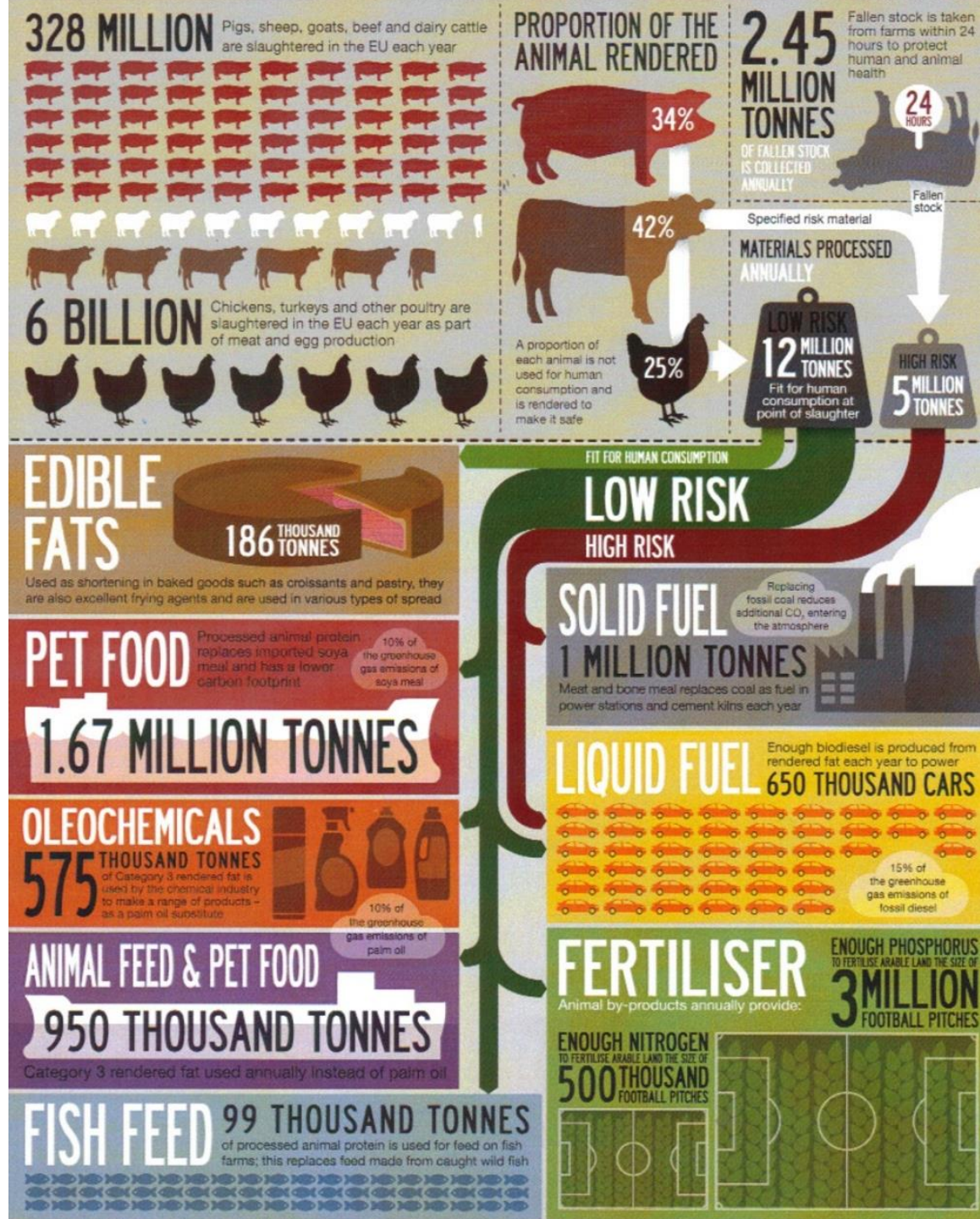


- Established developer and OEM of advanced **bio-waste treatment and sterilization** solutions for the **medical, pharmaceutical** and **agricultural** markets
- Revenue generating with global customers in more than 70 countries
 - 400 + medical waste units deployed
 - Over 3,500 sterilizers sold
- Patented Sterilization and Shredding Technology
- Developed disruptive technology that is set to replace current rendering process to treat agri-waste
- Experienced management team
- Established in 2005 with headquarters in Hungary and R&D office in Israel



<https://youtu.be/fBQp1kkialg>

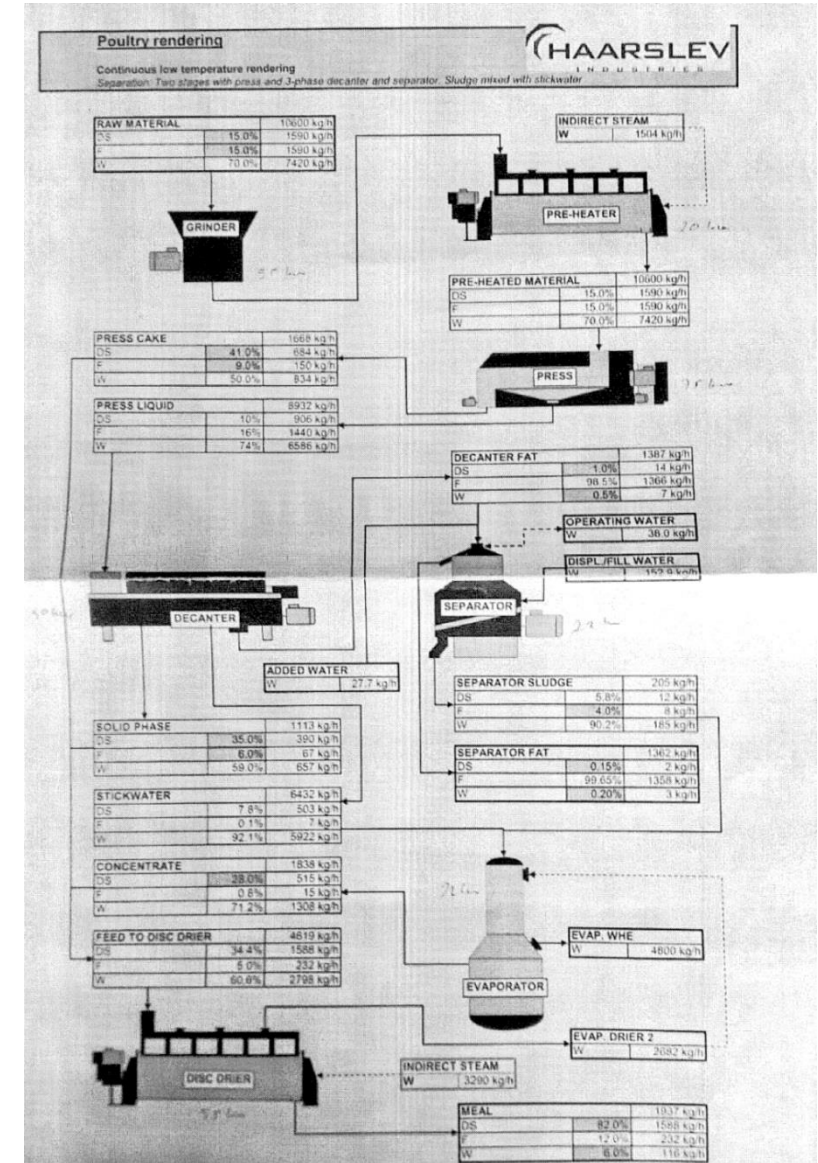
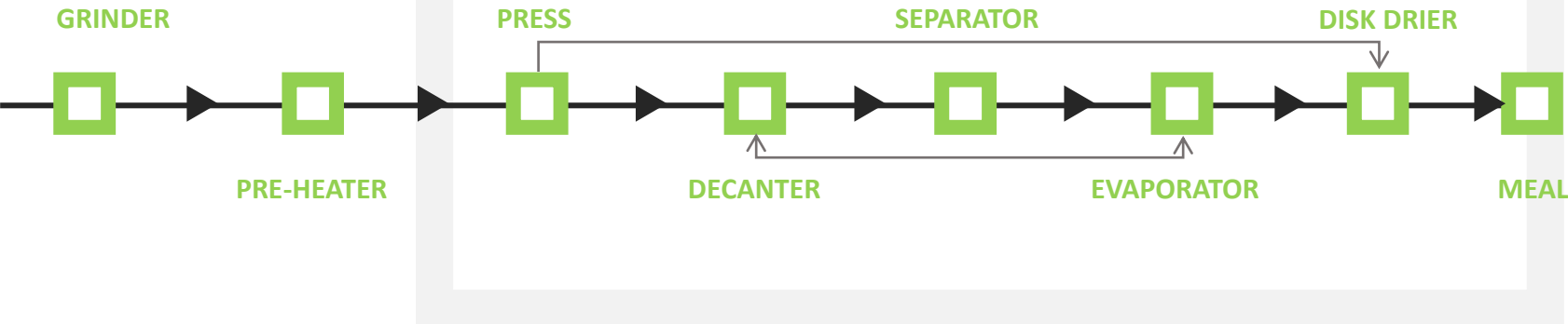
RENDERING FACTS IN NUMBERS



- One-third to one-half of each animal produced for meat, milk, eggs, and fiber is not consumed by humans
- By-products are primarily reprocessed as feed ingredients for livestock, poultry, aquaculture and companion animals; and into fuel and fertilizer
- 60% water, 20% protein and mineral, and 20% fat before the rendering process
- Approximately 300 rendering facilities in North America and 450 in Europe
- Rendering industry handles 25 million tonnes of waste in US and 17 million tonnes in Europe each year

RENDERING PROCESS

- Poultry continuous rendering (internal parts only)
- The same technology has been used for over 40 years



RENDERING PROCESS - THE PROBLEMS



High contamination risk
from stored waste at
the slaughterhouses



High contamination risk
from transported waste
to rendering facilities



Rendering plants
are a major odour and
environmental threat



Low value generated
from blood and feather



Low value generated
from ruminant waste



High transportation
costs



-
**THE
MARKET**

LEADING VENDORS

- Haarslev (\$260M, revenues 2016)
- Dupps (\$100M, est. revenues 2016)
- Local producers and specialized food processing equipment (Andritz, GEA Westfalia, Pieralisi) - estimated \$1BN
- More than 1,000 rendering facilities worldwide

AVERAGE SIZE OF FACILITIES

- 300 + tons per day
- \$5M + investment

VALUE OF GENERATED PRODUCTS

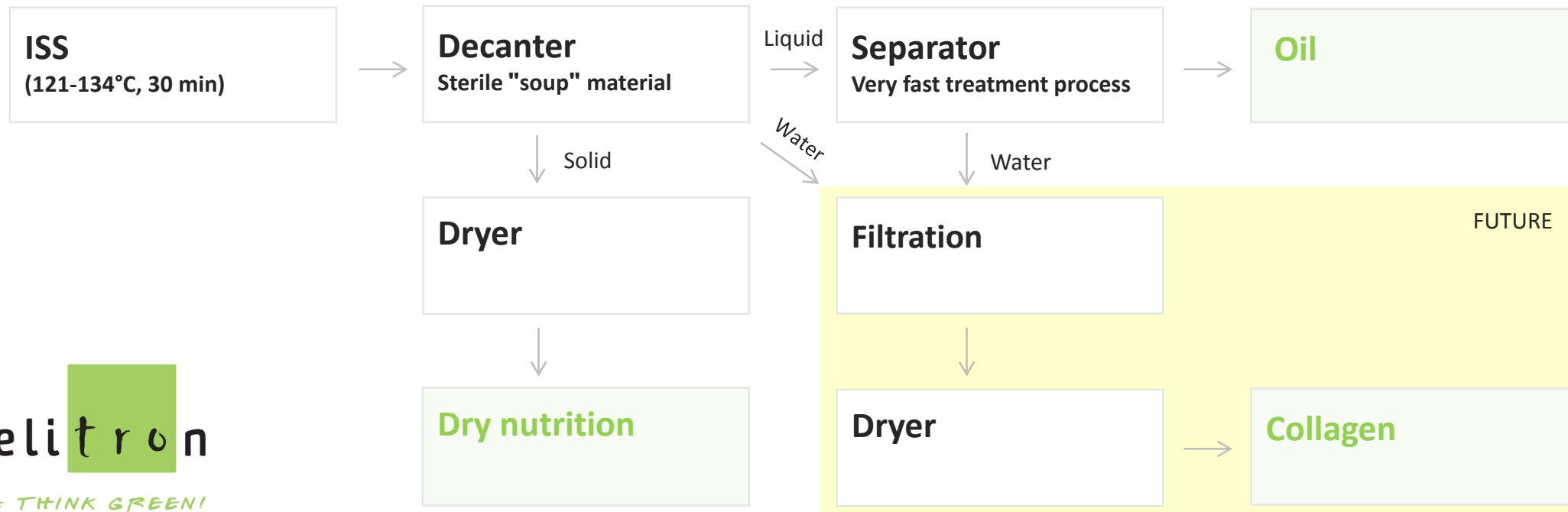
\$500-\$700 per ton

REGULATION

- US: FDA for animal feed and EPA for air and water
- Europe: ABP and MPD for feed and SA BREF for pollution prevention



NEW RENDERING PROCESS BY CELITRON



CORE TECHNOLOGY - INTELLECTUAL PROPERTY



US 20130306763A1

(19) **United States**

(12) **Patent Application Publication**
Carmel

(10) **Pub. No.:** US 2013/0306763 A1

(43) **Pub. Date:** Nov. 21, 2013

(54) **SYSTEM AND METHODS FOR CONVERSION OF BIOHAZARD TO MUNICIPAL WASTE**

B02C 23/40 (2006.01)

A61L 2/07 (2006.01)

B02C 19/18 (2006.01)

B02C 23/16 (2006.01)

(75) Inventor: **Itzhak Carmel, Mevaseret Tzion (IL)**

(52) **U.S. Cl.**

CPC *B02C 19/0075* (2013.01); *B02C 19/186*

(2013.01); *B02C 23/16* (2013.01); *B02C 23/40*

(2013.01); *A61L 2/07* (2013.01); *A61L 11/00*

(2013.01)

USPC *241/17*; *241/282.1*; *241/101.3*; *241/68*;

241/38; *241/41*; *241/24.11*; *241/20*

(73) Assignee: **CELITRON MEDICAL TECHNOLOGIES, Avur (HU)**

(21) Appl. No.: **13/885,749**

(22) PCT Filed: **Oct. 4, 2011**

(86) PCT No.: **PCT/IL11/00775**

§ 371 (c)(1),
(2), (4) Date: **Aug. 5, 2013**

(57)

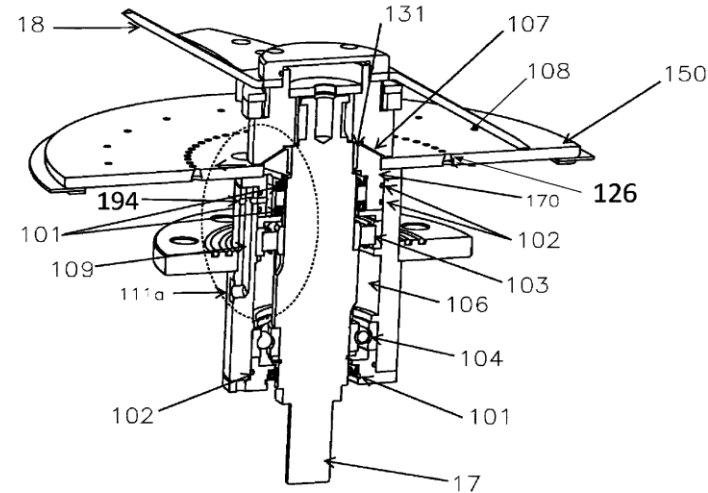
ABSTRACT

A system for shredding medical waste, the system comprising a medical waste treating chamber (4) being an interior of an enclosure disposed within an environment which is not to be polluted, a motor (11a), a shredder (2) seated in the chamber and including a motor-driven shaft (17) and blades rotated by the shaft, the shaft (17) extending through the enclosure thereby to define an interface between the waste treating chamber (4) and the environment, and interface seal apparatus (101) preventing leakage of at least fluids from the medical waste treating chamber into the environment, via the interface.

Related U.S. Application Data
(60) Provisional application No. 61/414,071, filed on Nov. 16, 2010.

Publication Classification

(51) **Int. Cl.**
B02C 19/00 (2006.01)
A61L 11/00 (2006.01)



CELITRON SOLUTION

ADVANTAGES

PATENTED STERILIZATION & SHREDDING TECHNOLOGY

- No transportation required as local and immediate treatment of all waste generated at the slaughterhouse
- Small footprint of the system (smaller than storage needed for rendering transportation)
- Generating better quality meal and oil as a result of the immediate and short processing time of "fresh" material
- Extracting high value soluble proteins from the water phase
- Low energy consumption as a result of separating the water via centrifuge, the shorter cycle time and the usage of a pressure vessel
- Sterilization process prevents any possible contamination risk
- No odour risk, reduce evaporation by 80%
- Higher value generated from difficult to treat waste (blood, feather, ruminants) – one machine treats all
- Advantageous operating model:
 - Capital investment with return over 3-5 years
 - Operating expenses 35%, mostly energy
 - Cost of raw material - up to 40%



COMMERCIAL TRACTION

- First poultry facility operating in Miluof
- Second Cattle facility operating in Tnuva
- Mobile system delivered to client (Beerot Yizhak)
- Start testing of Collagen extraction



GROWTH STRATEGY



International market presence. Fixed and Mobile

Jordan, Philippines, South Africa, Finland (reactor only)



Complete process for Soluble proteins (**Collagen**), and other proteins for biodegradable paper & packaging industry etc



Optimize process for **insects proteins** for aquaculture feed; start testing with Austrian company this year

BUSINESS MODEL & SALES CYCLE

-
12 MONTHS



BUSINESS MODEL

- Mostly one-time equipment sales
- Sell directly in home markets and through distributors abroad

TYPICAL PROJECT SIZE

- Any rendering facility is above 10 tons per day
- Typical project: 10 tons per hour

THE NEED

- Plan to build new/upgrade facility
- Increase in volume
- Upgrade quality of end products
- Regulation - (Pet Food)

DESIGN

- 2-3 months by engineering firm / Celitron

IMPLEMENTATION

- 6 months to build
- 3 months on site

SUMMARY

- **Disruptive technology**
 - Reduce environmental threat of rendering facilities
 - Reduce energy consumption
 - Better quality end products
- **Operating in a large market**
- **New revenue streams with soluble proteins**
- **Patented technology**
- **Experienced management team**

celitron

WE THINK GREEN

WWW.CELITRON.COM

THANK YOU



Telco Systems



Telco Systems Overview

- A leader in innovative Carrier Ethernet and SDN/NFV solutions
- Broad hardware and software product portfolio
 - End-to-end CE 2.0, MPLS, SDN & NFV carrier-grade portfolio
- Operating in high-demand markets with scalable business model
- Multi-billion dollar installed base at 300+ service providers in 50 countries
- Close strategic partnership with Arm and its Neoverse infrastructure roadmap
- Seasoned management team with 46 years' experience in the telecom domain
- Headquarters in the United States and Israel

Global tier 1 customer base























Global Presence



Main Offices

- USA – Mansfield, MA
- Israel:
 - Yokneam
 - Hod Hasharon
- Bulgaria – Sofia (R&D, Support)

- R&D – 70 staff
- Sales/support – 36 staff
- Admin/operations – 14 staff

Carrier Ethernet Product Portfolio

Edge Network Innovation


Access & Demarcation

Ethernet / MPLS / IP / SDN

- T-Marc 3348S / SH**
Advanced 10GE CE 2.0, MPLS, IP & SDN Demarcation
- T-Marc 3312SC / SCH**
Multi-service 1GE CE 2.0, MPLS, IP, CES & SDN Demarcation
- T-Marc 3308**
CE 2.0, MPLS, IP & SDN Premium Business Services NID
- T-Marc 3306**
Advanced CE 2.0, 1GE Business Services NID
- T-Marc 280**
1GE Demarcation

Ethernet

- T-Marc 3308D**
DOCSIS® Enabled CE 2.0, MPLS, IP & SDN NID
- T-Marc WD 340 / 3312 / 3348**
Weatherproof Service Demarcation
- T-Marc 300 series**
1GE Demarcation
- T-Marc 250/254**
Hardened demarcation and CES




Edge & Aggregation

Ethernet / MPLS / IP / SDN

- T-Metro 8100**
Ultra-Capacity 100GE CE & Cloud Gateway
- T-Metro 8001**
10GE Service Aggregator & Cloud Gateway
- T-Metro 7224**
MPLS-PE 10GE Aggregator

Ethernet

- T-Metro 7124S**
MPLS 10GE Aggregation Platform
- T-Metro 200**
Multi-service Access / CES Platform
- T5C-XG**
10GE Aggregator
- T-Metro 8006**
High Density Aggregator & Cloud Gateway
- T5C-24GT**
1GE Aggregator



ATCA

AdvancedTCA

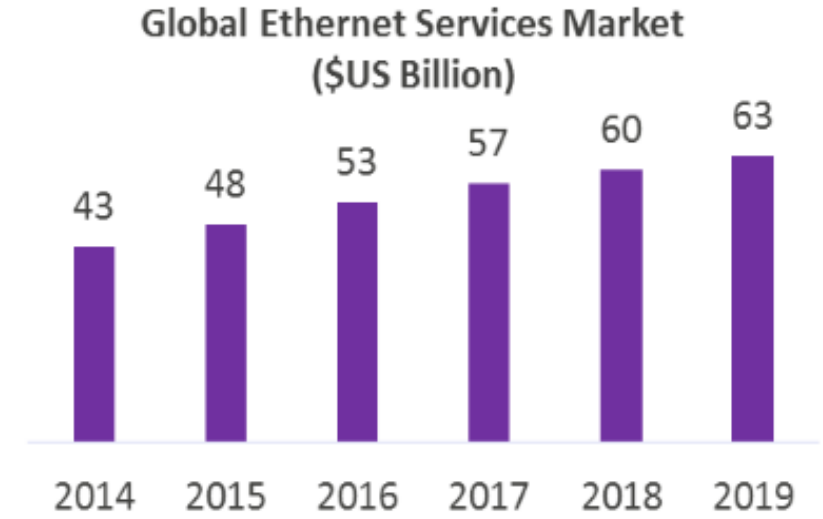
- T-ATCA 401**
10GE AdvancedTCA® Switch Blade
- T-ATCA 404**
40GE AdvancedTCA® Switch Blade
- T-ATCA 510**
100GE AdvancedTCA® Switch Blade

Carrier Ethernet (CE) technology enables communication service providers to utilize simple Ethernet protocols to transfer large amounts of data with high quality

Carrier Ethernet Switching Market Growth

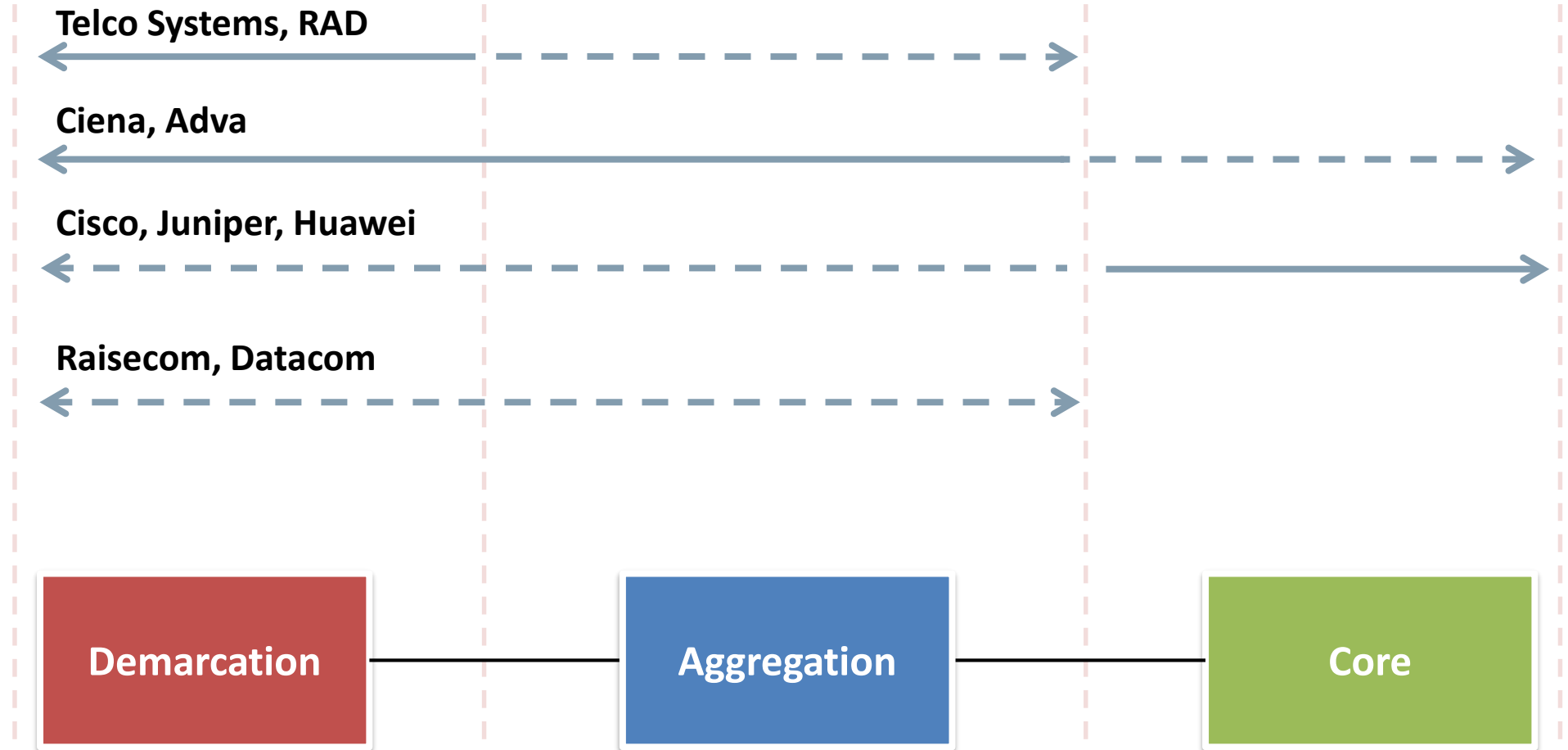
Key market drivers

- Expand service coverage
- Bandwidth demand
- Extraordinary performance
- 5G deployments – connecting the cellular towers to the core network
- Accelerated service rollout
- Expansion of Business Cloud services



Source: CE Services Market Trends Report, MEF and Frost & Sullivan (Sep 2015); market estimate by HIS Infonetics

Carrier Ethernet Competition

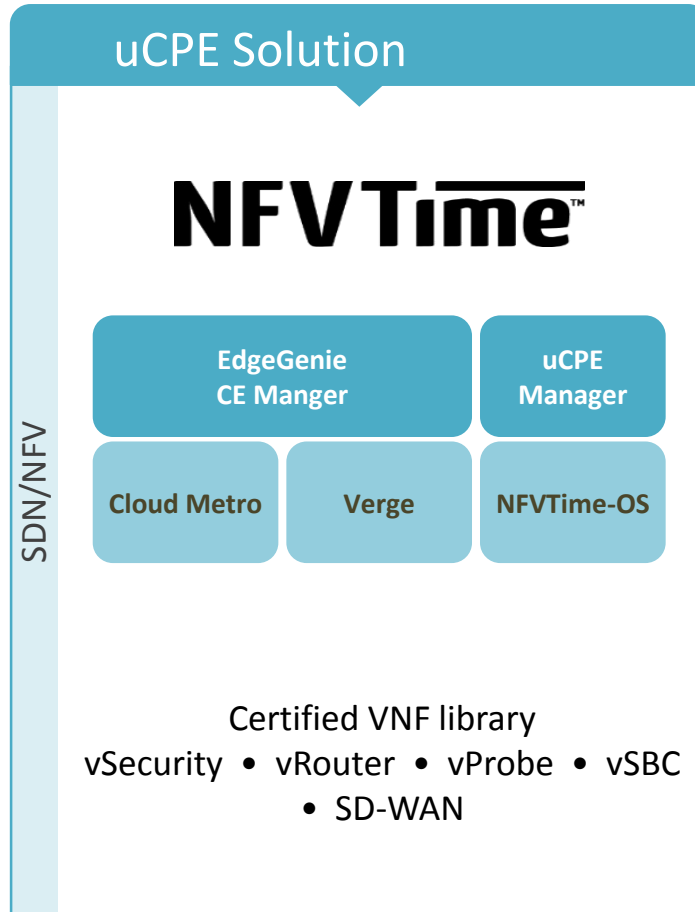


KEY Optimal: 

Non-optimal (Price/Features Set): 

NFV Product Portfolio

Edge Network Innovation

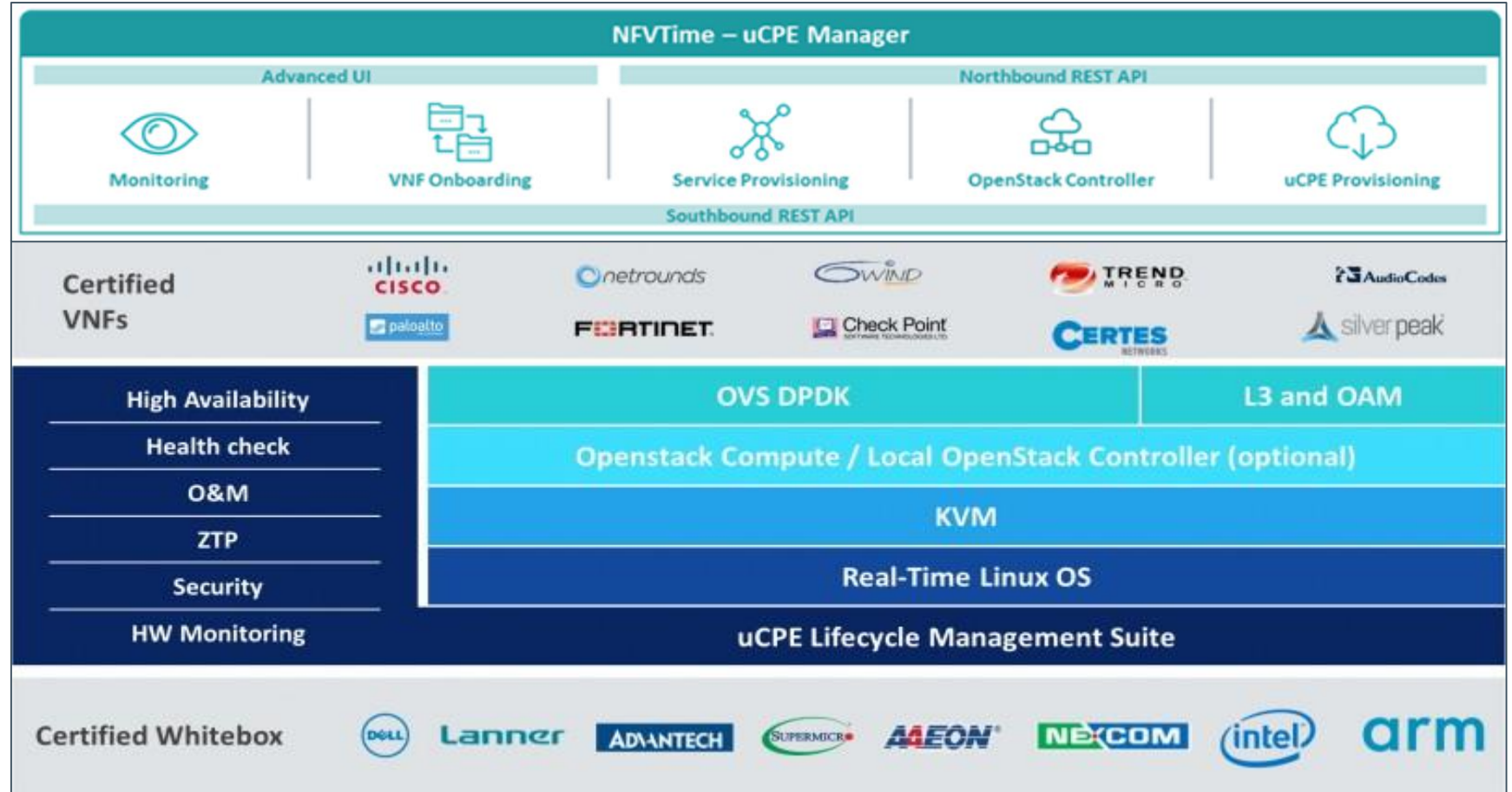


Network function Virtualisation (NFV):

- Enables multiple network devices – Router, Firewall, SD-Wan etc – to be replaced with a single generic hardware platform that runs many network functions simultaneously
- Drives the decoupling of hardware and software that increases business and operation agility, along with OPEX and CAPEX savings

NFVTime-OS Solution

OpenStack based architecture

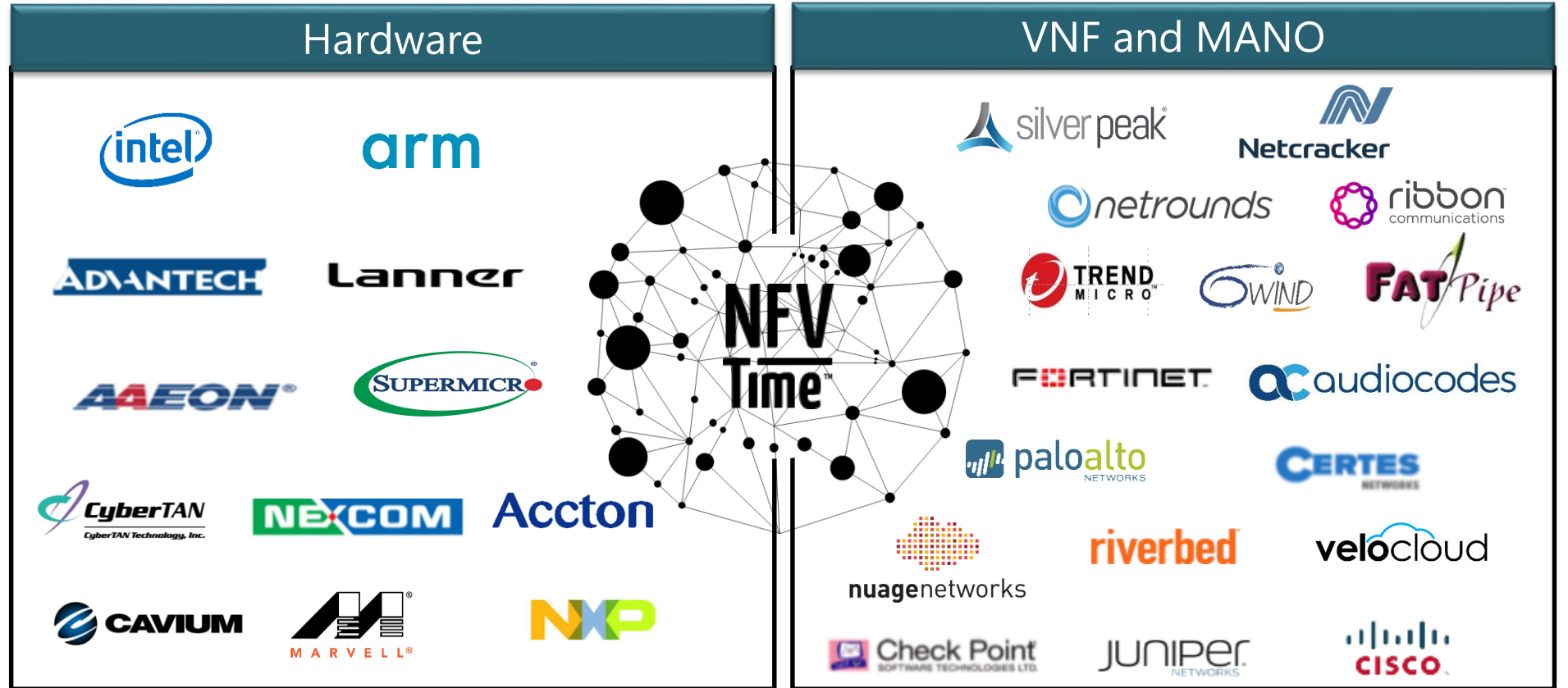


NFVTime



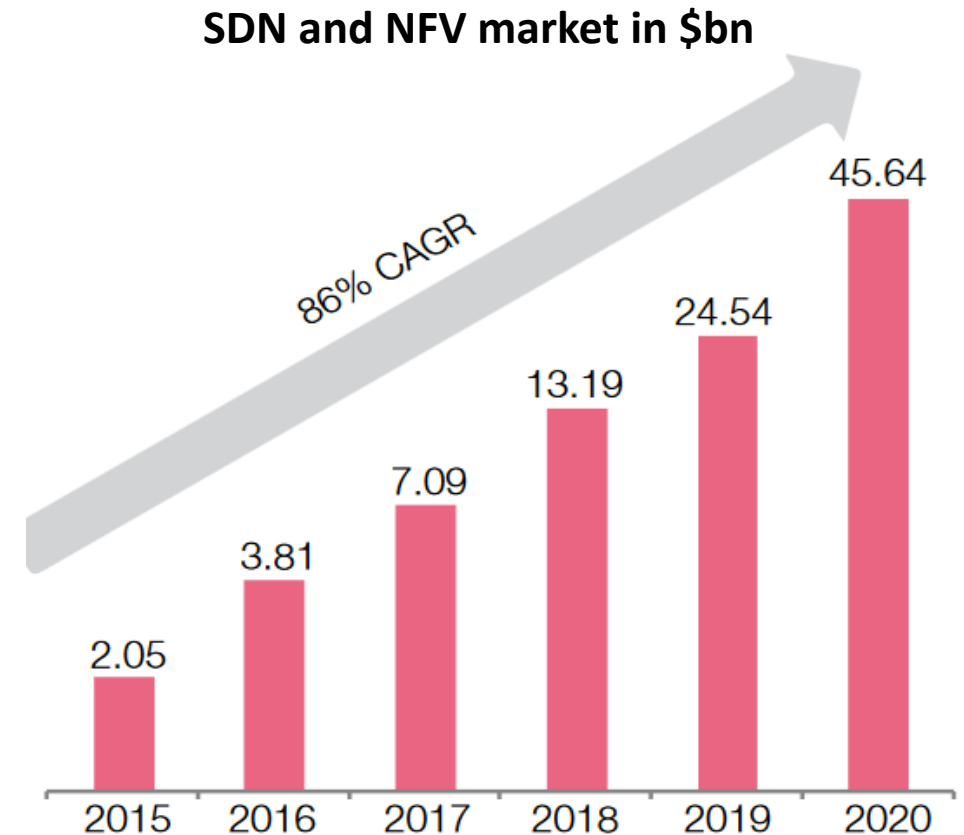
NFVTime Ecosystem

Official Partners and Certified Solutions



NFV Market Growth

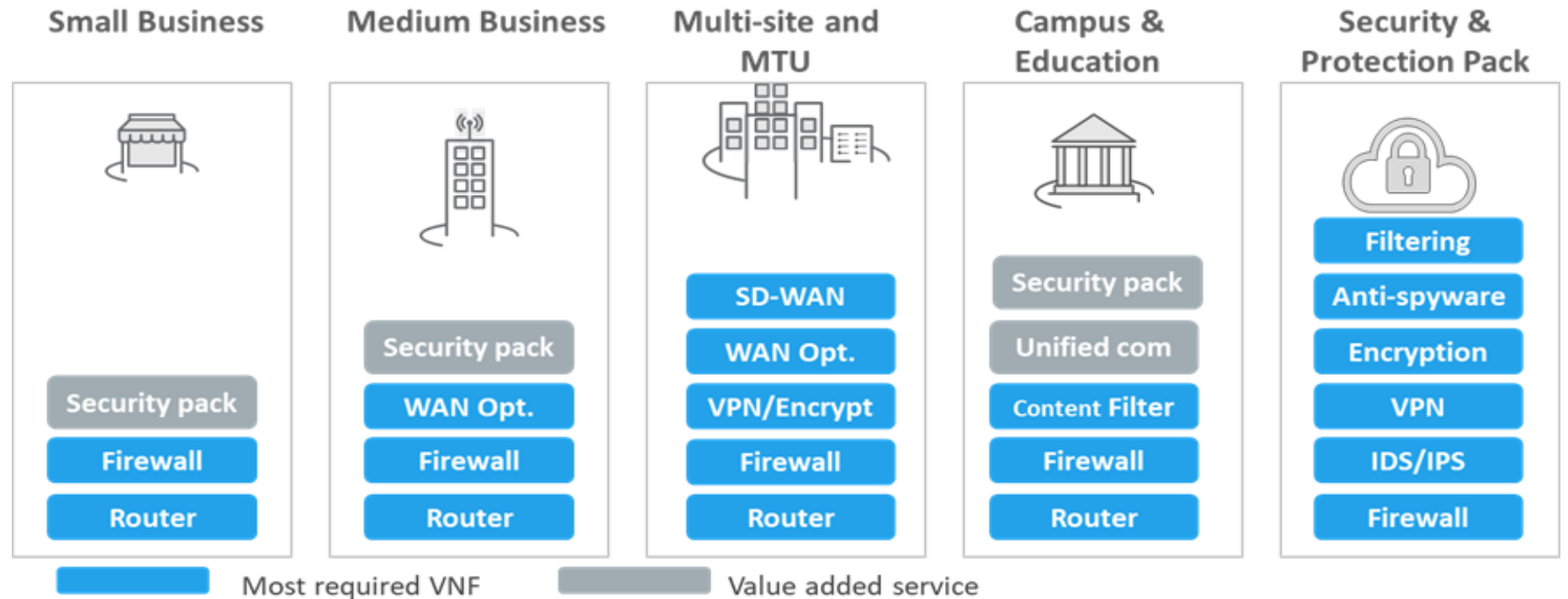
- NFV market is expected to be worth **\$70bn by 2024**
- As the market evolves, the **software segment is expected to lead** the NFV market **growth**



Source: Capgemini Consulting

NFV Sample Use Cases

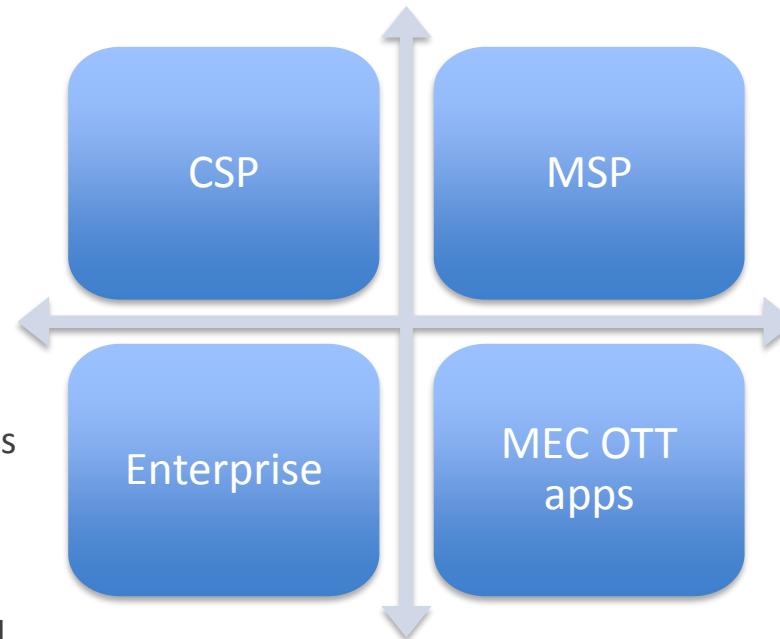
New growth business model to Communication Service Providers



NFV Target Markets

- Grow Managed services revenues (IT Network)
- Business agility
- Reduce OPEX and CAPX
- Technology agility and innovation

- Better service to remote sites
- Reduce OPEX and CAPEX
- Explore innovative applications
- Evolving communication and app needs



- Grow Managed services revenues (IT outsourcing)
- Business agility
- Reduce OPEX and CAPX
- Commoditise CSP offering
- Technology agility and innovation

- 5G & IoT deployments
- Latency sensitive apps
- New revenues from new apps
- Reduce bandwidth delivery cost

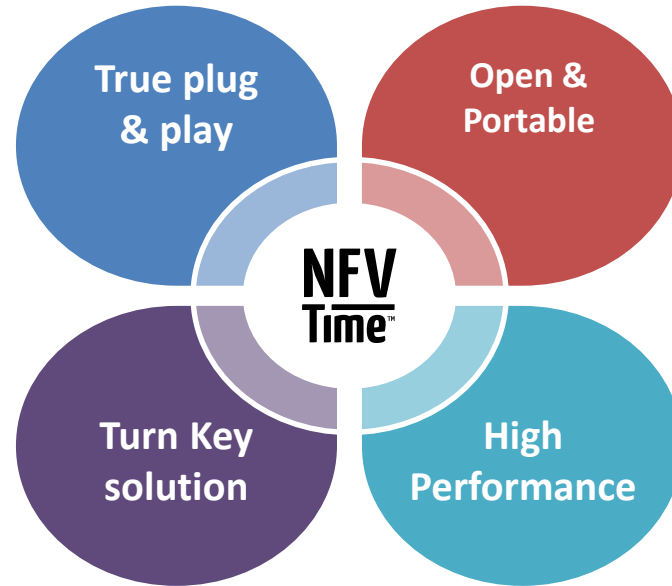
NFVTime Advantages

Automated and plug & play deployment

- uCPE deployment
- Service and VNF deployment
- Service chain and service configuration

Full lifecycle of service management solution

- Turn on service in a week
- Includes all component to turn on a service
- Richest Partner Eco-System
- Integration ready



Maximise industry-wide innovation and interoperability

- Run any VNF on any whitebox
- X86 and Arm
- Based on widely open source
- Flexible
- Hardware agnostic

High performance and optimized solution

- Market's best cost/performance ratio
- Designed to run on low cost devices
- Run x2 VNFs with high performance

Open; Short time to market; Designed for low cost whitebox; Performance optimised; Broad ecosystem; Support any VNF

NFVTime Competition

	Hardware Agnostic X86 and Arm	Bring your own device	Built on Open Source	Automated Plug & Play	VNF certification & Management	Avoid vendor lock-in	Innovation driven	Low cost solution
Telco Systems	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓
ADVA	✓ X86 only	✓	✓✓✓	✓✓✓	✓✓	✓✓ X86 only	✓✓	✓
Juniper	X	X	X	✓✓	✓	Vendor lock in	✓	✓
Viptela Versa VeloCloud Nokia Cisco	X	X	X	✓✓	✓ Single Function	Vendor lock in		

Business Model

NFVTime business offering:

	Type	Bus. Model	Developed by	GP	Comments
Software	NFVTime OS	Perpetual/ Subscription	Telco Systems	90%-95%	
	NFVTime uCPE Manager	Perpetual/ Subscription	Telco Systems	90%-95%	
	VNF	Perpetual/ Subscription	Third party	20%-30%	vFirewall, vRouter, SD-WAN
Services	Hardware & Software	Project based	Telco Systems	60%-70%	Certification, Integration
Hardware	CloudMetro	Perpetual	Telco Systems	35%-40%	
	VERGE	Perpetual	Third party	20%-30%	Lanner, Advantech, NXP, Marvell

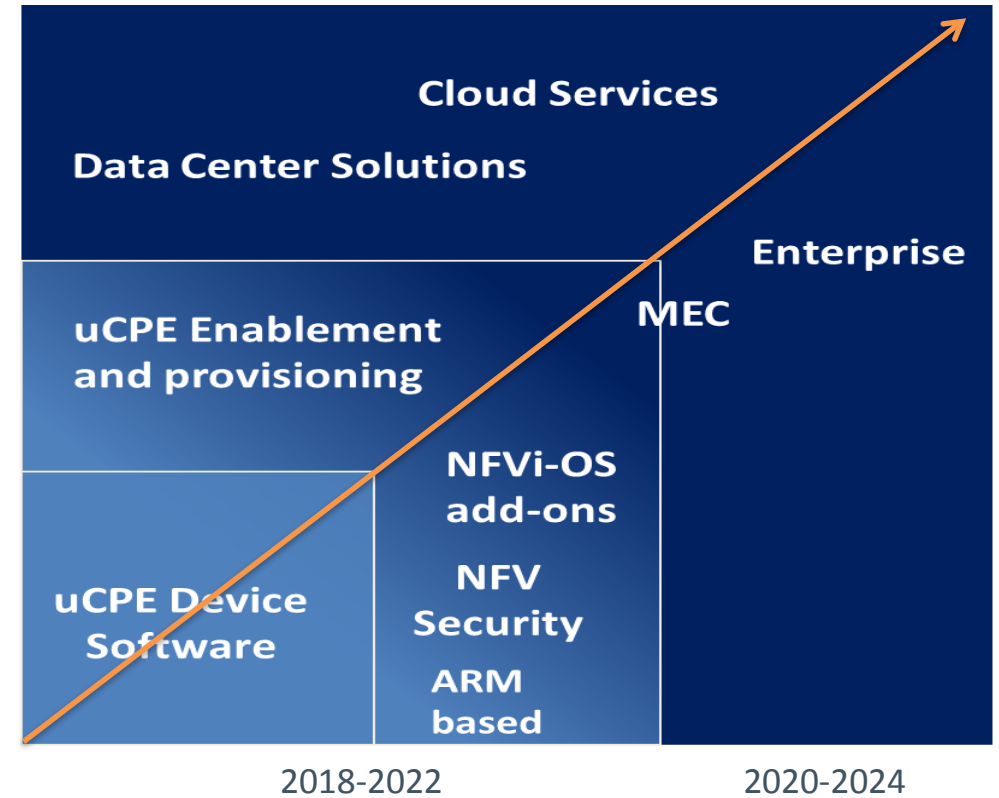
Carrier Ethernet business offering:

	Type	Bus. Model	Developed by	GP	Comments
Hardware	CE devices	Perpetual	Telco Systems	45%-55%	
Software	EdgeGenie- Orchestration	Perpetual	Telco Systems	90%-95%	
Services	Hardware & Software	% of installed base	Telco Systems	60%-70%	Technical support

KEY: Green = main revenue contributors

Growth Strategy

- Land & Expand
 - Identify NFV opportunities in existing customers
 - Expand to end-to-end solution
- Use tech leadership to differentiate and penetrate tier 1s
- Expand geographically and acquire customer base
- Provide innovative solutions for 5G, MEC, IoT, Cloud, Enterprise



Thank you

Arm/Telco Systems Partnership Update

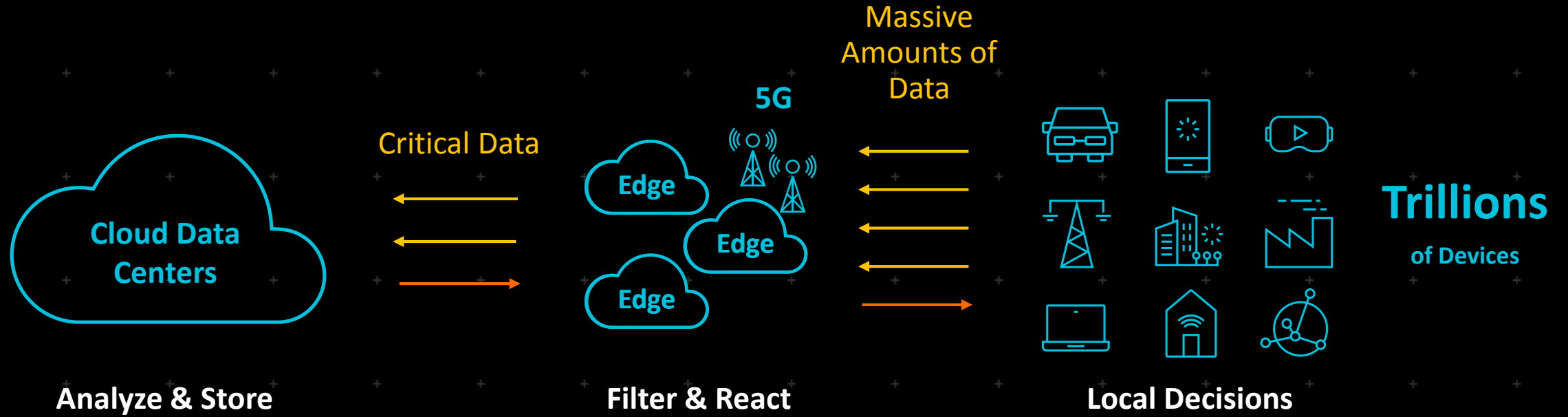
Colin Alexander

Director, Wireless Marketing

Infrastructure LoB, Arm



Data consumption is driving future designs



arm NEOVERSE

Arm Neoverse: The Cloud to Edge Infrastructure Foundation
for a World of 1T Intelligent Devices

What?



- **Arm Neoverse**, a new vision and unifying brand identity for the Arm-based technology powering the infrastructure from the core datacenter to the edge
- **A new roadmap** of products dedicated to infrastructure and achieving 30 percent annual system performance gains on leading-edge process nodes
- **Broad ecosystem support** to enable the diverse solutions through innovation from microarchitecture all the way up to hardware, software, tools, and services

Why?



To enable a new and **transformative cloud infrastructure** designed to support the demands of a **trillion intelligent devices**

arm NEOVERSE

The Cloud to Edge Infrastructure Foundation
for a World of 1T Intelligent Devices

+

High Performance, Secure IP and Architectures

+

Diverse Solutions and Ecosystem

+

Scalable from Hyperscale to the Edge

Endorsed by a robust ecosystem

Silicon



Cloud



Platforms



Operators



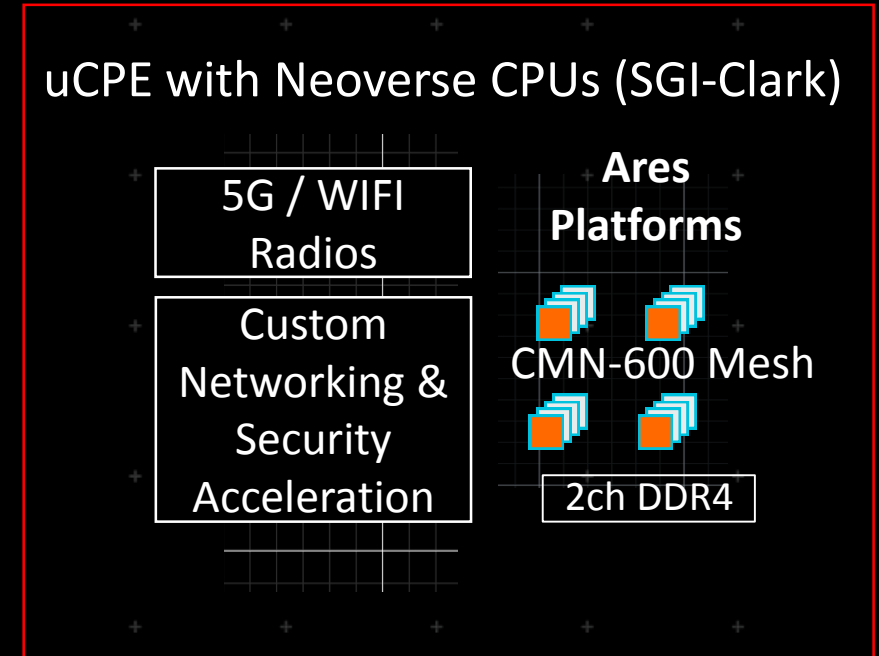
arm NEOVERSE

Arm/Telco Systems Partnership

- Joint Partnership agreement finalized – Q2 2018
- Multi-year program to deliver first commercially available Arm-based uCPEs
- Telco Systems working directly with Arm and SoC Partners to deliver next-level performance, security, containers
- Working together to engage with Tier 1 VNF vendors
- First commercially deployable uCPE devices available in Q1 2019
- Strong interest from Tier 1 operators based on price/performance advantages
- First Arm-based Mobile Edge solution

Key benefits of Telco Systems' Arm based uCPE

- Enables secure provisioning and multiservice aggregation with TrustZone
- NFVTime zero touch provisioning
- Superior VNF performance at 2/3 of the cost
- Open solution, rather than proprietary or grey-box
- NFVTime runs seamlessly on both Arm-based and x86 platforms



SoCs based on Arm technology enable power-efficient designs offering unprecedented throughput and scalability—while maintaining or improving on the system price points needed and wanted by the market

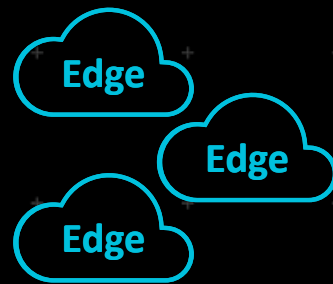
Wireless network – Expanding Telco Systems & Arm collaboration towards support for edge compute platforms.

Joint collaboration on workload optimized general purpose compute.



Cloud & Core Network

Cloud Compute



Edge Compute

Latency, Security & Power

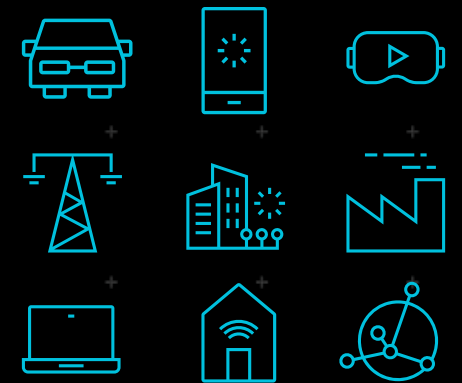


4G & 5G



Wireless Infrastructure
Radio Access Network

Emerging 5G use cases



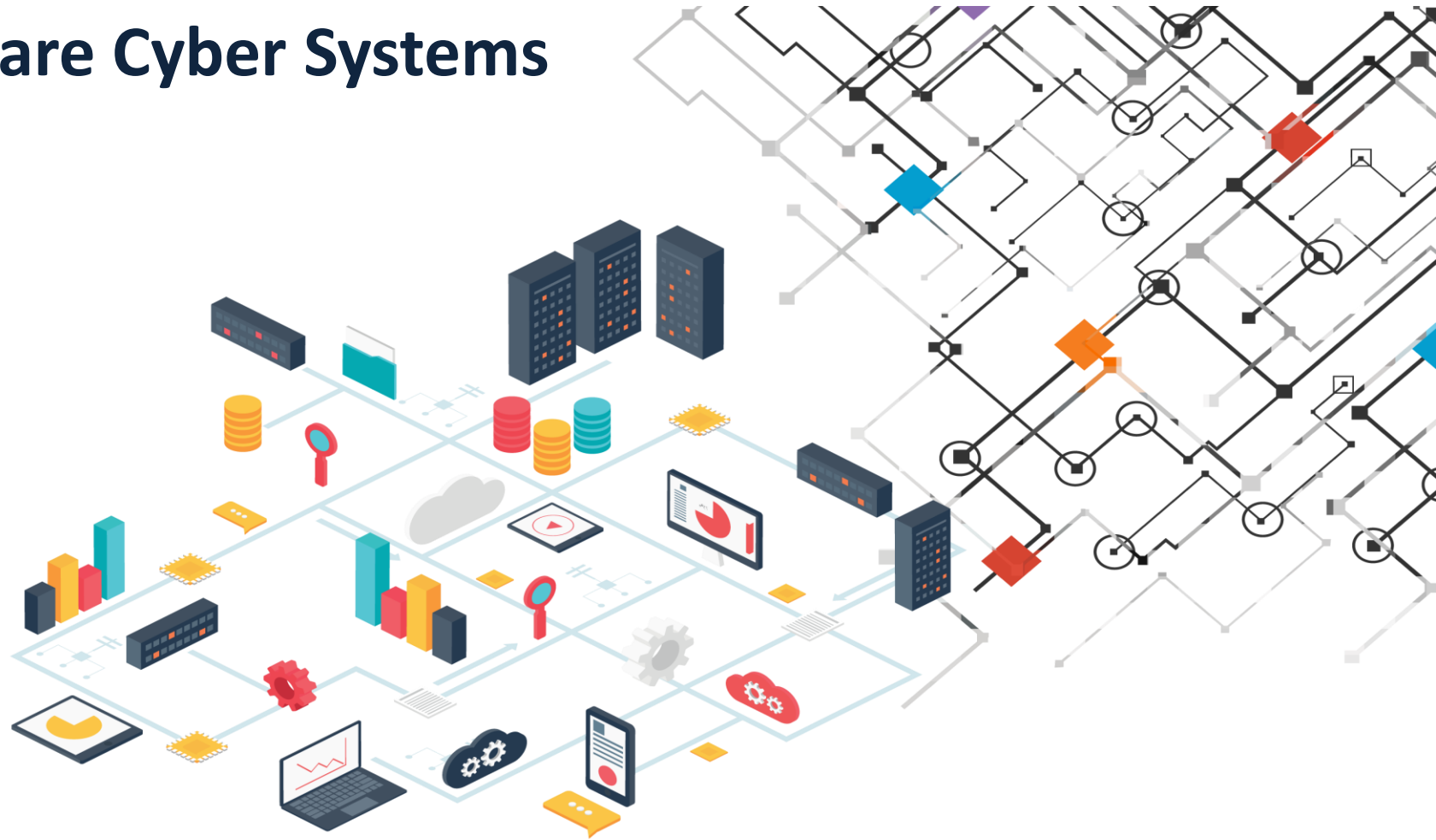
Massive Connectivity IoT
Industrial IoT
Vehicle to Infrastructure

Latency Requirements for Emerging 5G Applications

Robotics / Medical	V2X Control	Smart City, IoT Control
2.2ms	10ms	15-20ms



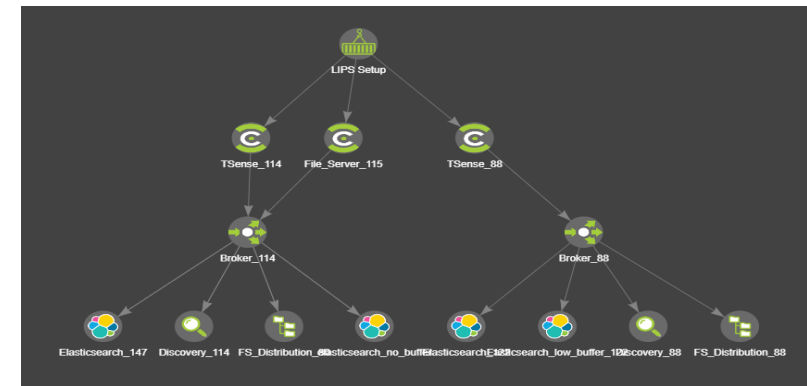
Celare Cyber Systems

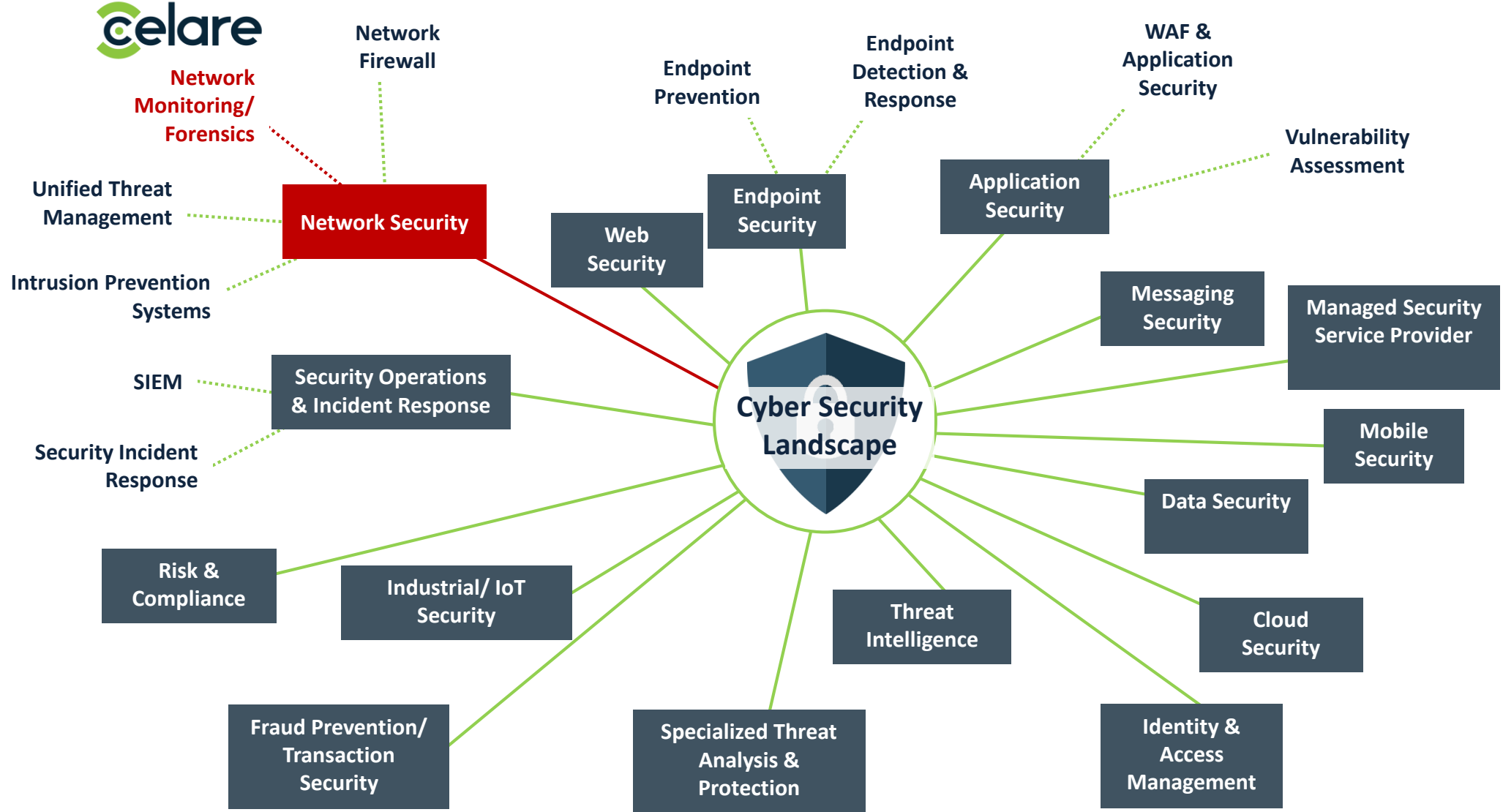




Celare Overview

- **Celare Cyber Systems** is the cyber arm of the BATM Advanced Communications group
- Provides Cyber Security, Network Visibility & Monitoring
- Services utilities, defense organizations, governments and critical infrastructure in public and private sectors
- Multiple contracts and Proof-of-Concept projects
- Experienced team of veterans of MOD Cyber & Intelligence units
- Established in 2012 and based in Israel





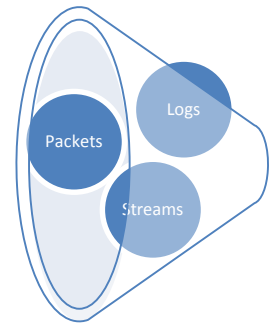
Markets and Solutions

- **Main Celare Products & Solutions:**
 - T-Sense: software-based smart Network Sensor to discover and classify network devices, applications, services and activities over the network
 - T-SG: Network Security collaboration platform
- **Current Celare market focus:**
 - Solution and Services
 - 10/40/100 GE Ethernet
 - Government organizations
 - Europe, APAC

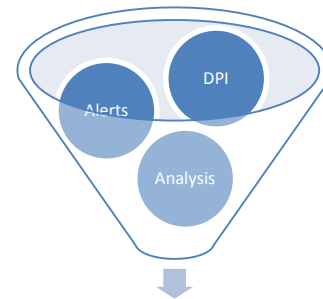
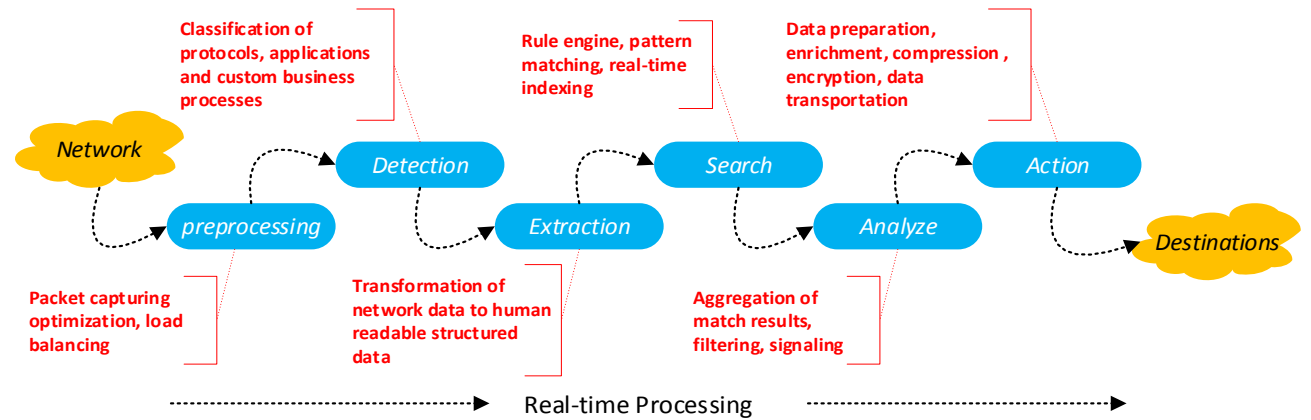
Network Monitoring Market

- Total network monitoring market expected to grow from \$1.67bn in 2017 to \$2.93bn in 2023
 - Enterprises to grow at the highest CAGR
 - Ethernet market to hold the largest share
 - APAC to grow at the fastest rate
- Growth drivers in government market
 - Agencies and departments striving for fast and reliable technology to process their data
 - Network monitoring solutions help with:
 - Rapid disaster recovery from network failure
 - Remote configuration
 - Cybersecurity
 - Protection of critical network infrastructure from cyberattacks and other adversities

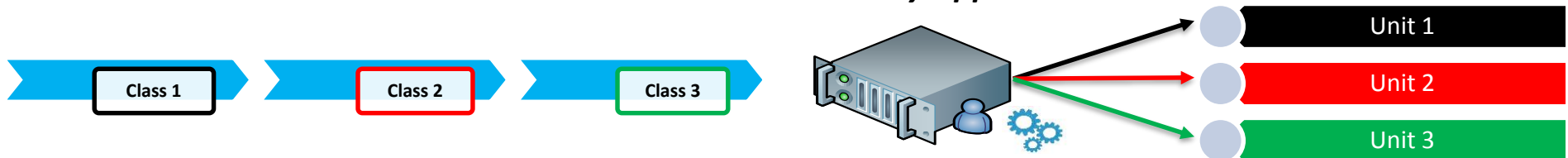
Celare Products



T-Sense Software Platform



T-SG Security Appliance



T-Sense Platform



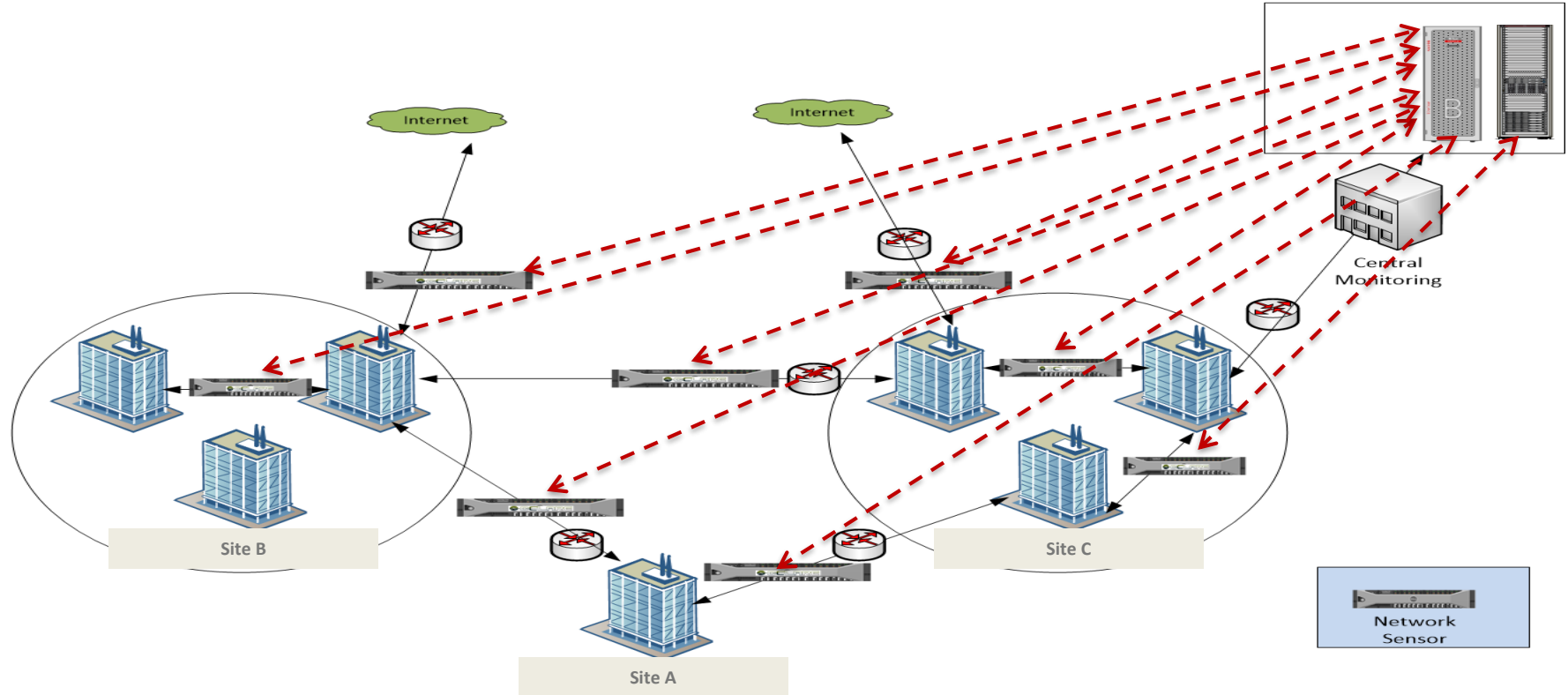
Finding complex signatures in Nx100Gbps network data



- *Collect accurate data without missing cyber threats*
- *Support high performance over huge amount of data*
- *Anticipate system failures, anomalies and incidents*
- *Monitor network process activity to identify normal behavior*
- *Full security coverage for configuration management, policy enforcement and behavioral analysis*

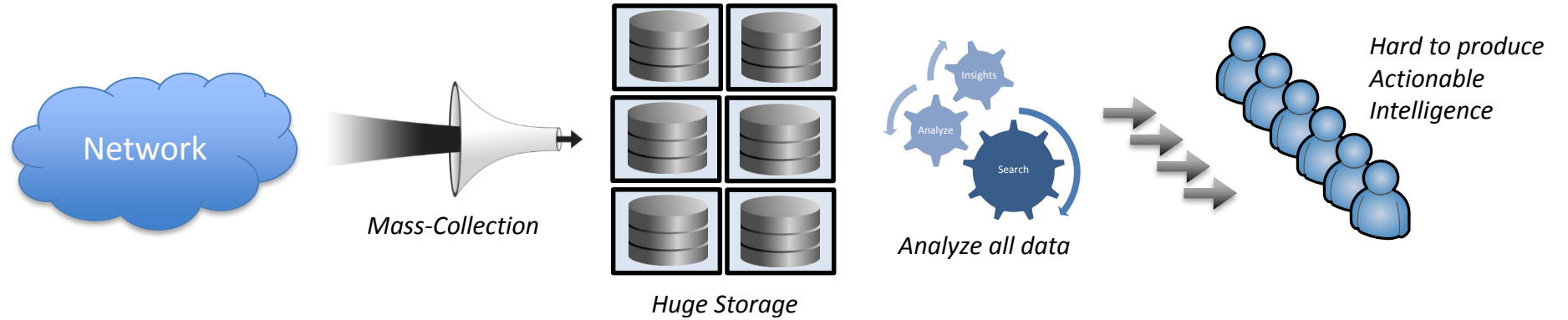


- *Reduce costs against other commercial products*
- *Reduce customer dev risks, time & efforts*
- *Let customers focus on research rather than invest in infrastructure*
- *Solving privacy issues by secured & reliable data movement*
- *Better decision making by analyzing more accurate data*

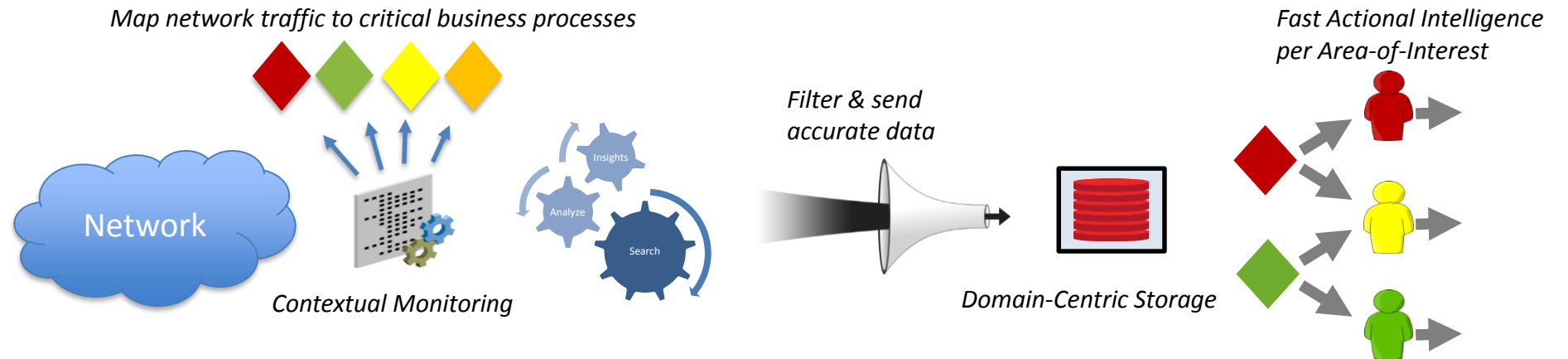


T-Sense Differentiator

Traditional Solutions: Unsupervised Network Monitoring



T-Sense: Contextual Network Process Monitoring



Business Model

- **Sales Cycle:**
 - Average: 1-2 years
 - Contract size: typically multi-million US\$ over several years plus ongoing maintenance
- **Direct:**
 - Software:
 - One-time software licensing fee
 - Recurring: yearly maintenance and software upgrades
 - Hardware: One-time sale, yearly maintenance
- **OEM:**
 - Yearly subscription fee
 - Royalties per project

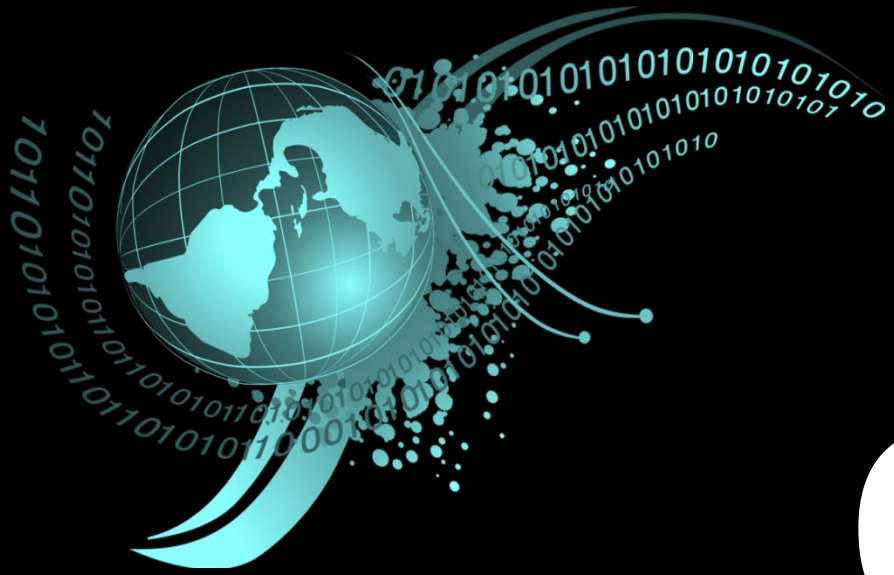
T-Sense Live Demo

Summary

- Cyber security is and will be an essential part of any network
- Disruptive technology – best-of-breed network visibility and forensic solutions
- Designed for large-scale and high-speed networks
- Serving governments and large corporations



Thank you



Q&A

