

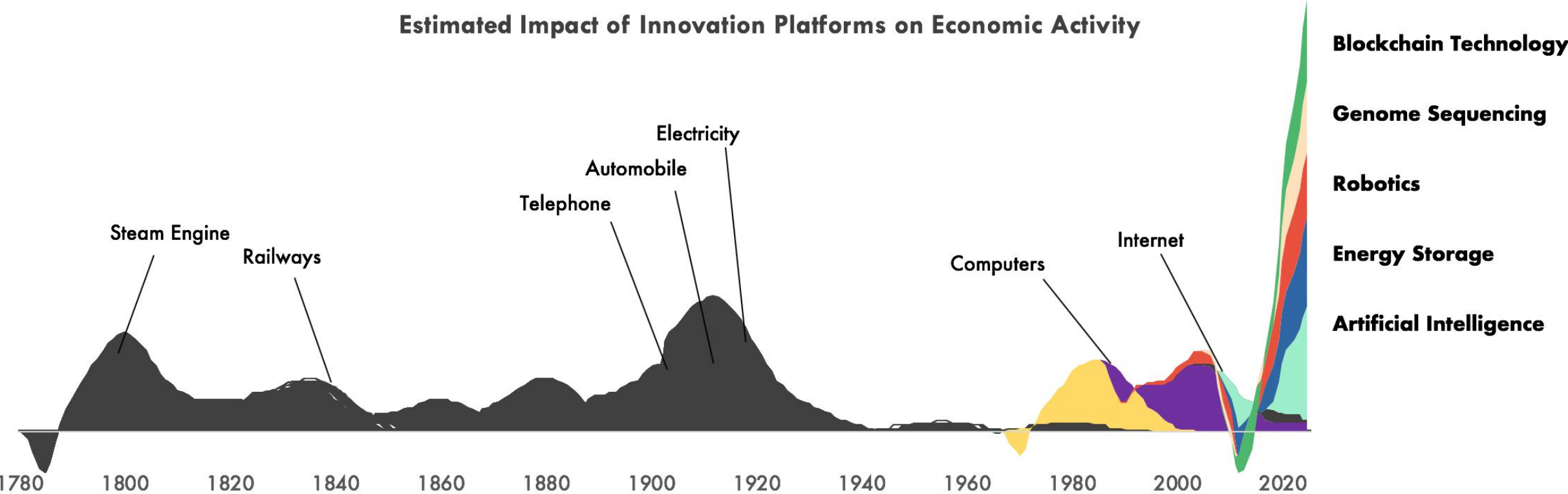


Integrating New Disruptive Technologies Into Your Innovation Portfolio

Sudeep Basu, Ph.D.
Practice Leader, Innovation Services
Frost & Sullivan

DEVELOPING YOUR OWN “ARK” OF TECHNOLOGICAL SUCCESS!

Estimated Impact of Innovation Platforms on Economic Activity



Source: ARK Investment Management LLC, 2018 | Forecasts are inherently limited and cannot be relied upon.

FROM DIVISION OF LABOR TO THE MULTIPLIER EFFECT OF TECHNOLOGIES

Multiplier Effect of Technologies



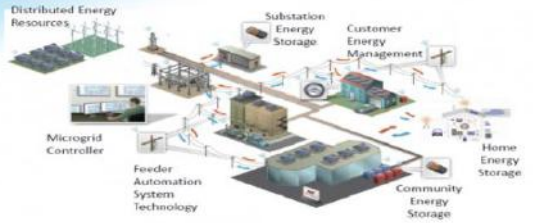
= AI * Auto * Energy



Aero * 3D Print * Logistics =



= Bio-T * IT * Materials



Buildings * IT * Energy =

- Rate of Change of Stand Alone Tech
- Software
 - Mobile
 - Entertainment
 - Genomics
 - Energy
 - Automotive
 - Aerospace
 - Biotech-Pharma
 - Construction



Division of Labor (Old Economy)

ANALYZE/SELECT/STRATEGIZE – RECOMMENDATIONS OF SCOUTING



DEVELOPING YOUR TRENDS PLATFORM AS THE BASIS FOR INTEGRATING DISRUPTIVE TECH

Top Technology Buzz For The Future

Examples:

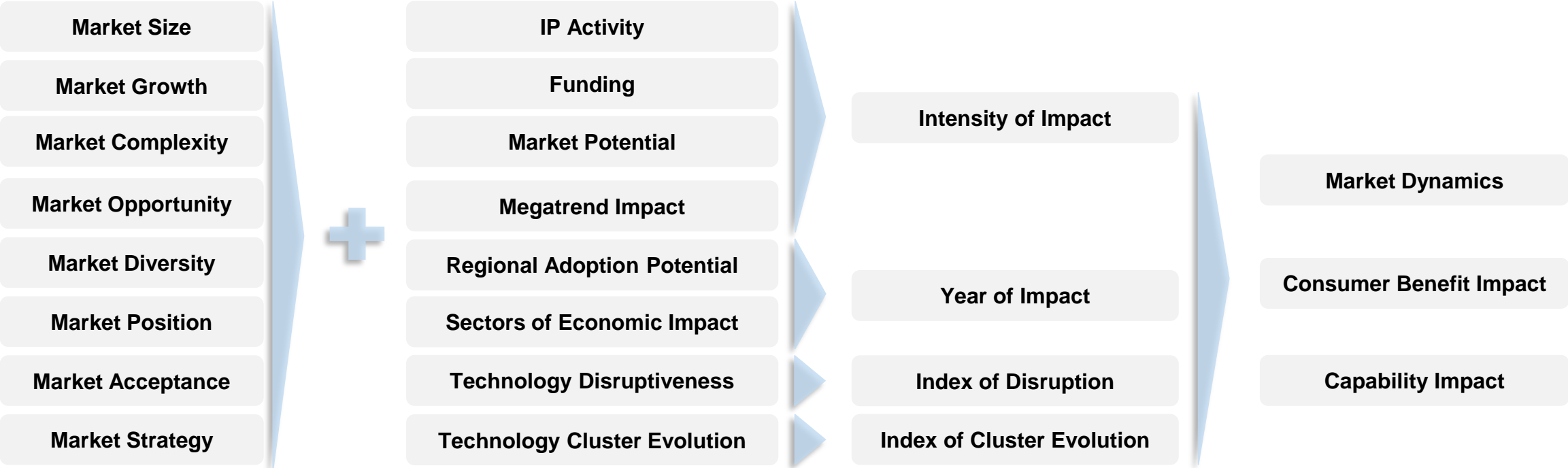
- Blockchain
- Quantum Computing
- Connected Vehicles
- Sensorization of Devices
- Wearable Devices
- Digital Currency
- Personal Robots
- Flexible Electronics
- Powered Exoskeletons
- Nanobots
- Bio-Batteries

 <p>CONNECTIVITY AND CONVERGENCE</p> <ul style="list-style-type: none"> • Big Data • Augmented Reality/Virtual World • Connected Living • Space Jam • 3D/4D Printing 	 <p>COGNITIVE ERA</p> <ul style="list-style-type: none"> • Machine Learning • Quantum Computing • Neuromorphic Computing 	 <p>BRICKS AND CLICKS</p> <ul style="list-style-type: none"> • Digital Kiosks • Interactive Stores • New Retail Logistics Models • Integrated Omni Channel Marketing 	 <p>SMART IS THE NEW GREEN</p> <ul style="list-style-type: none"> • Smart Technologies • Smart Products • Smart Cities 	 <p>SOCIAL TRENDS</p> <ul style="list-style-type: none"> • Gen Y • Reverse Brain Drain • Heterogeneous Society • She-economy • Middle Class 	 <p>NEW BUSINESS MODELS</p> <ul style="list-style-type: none"> • Co-Creation • Circular Economy • Personalization & Customization • Value for Money • Sharing 	 <p>HEALTH WELLNESS AND WELL-BEING</p> <ul style="list-style-type: none"> • Mind, Body & Soul • E-Health & M-Health • Gene Therapy • Non-Invasive Surgery
 <p>INNOVATING TO ZERO</p> <ul style="list-style-type: none"> • Zero Vision at Work • Carbon Neutral Cities • Zero Target by Cities 	 <p>ECONOMIC TRENDS</p> <ul style="list-style-type: none"> • Future of Resources • Africa as the Growing Market • Next Game Changers 	 <p>URBANIZATION: CITY AS A CUSTOMER</p> <ul style="list-style-type: none"> • Mega Corridors • Mega Cities • Mega Regions • Mega Slums 	 <p>FUTURE OF INFRASTRUCTURE DEVELOPMENT</p> <ul style="list-style-type: none"> • Transport Infrastructure • Deep Sea Mining • Future of Water Infrastructure • High-Speed Rail 	 <p>FUTURE OF ENERGY</p> <ul style="list-style-type: none"> • Availability of Resources • Energy Harvesting • Smart Grids • Renewable Mix • Shale Gas 	 <p>FUTURE OF MOBILITY</p> <ul style="list-style-type: none"> • Micro-Mobility • Autonomous Cars • Telematics Based Insurance • Car Sharing • Connected Cars • Integrate Mobility 	

METHODOLOGY: TOP TECHNOLOGIES IDENTIFICATION & PRIORITIZATION PROCESS

Overview of Methodology
As part of the analysis, Frost & Sullivan will generate a decision support matrix (DSM) to unveil the universe of opportunities and rate and rank the top Technologies & Start-Ups that are lined up for potential success:

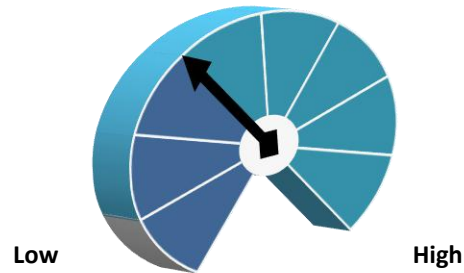
Technology & Business Roadmap



Source: Frost & Sullivan

WEARABLES - OVERVIEW

Tech Maturity



Megatrends Impacted

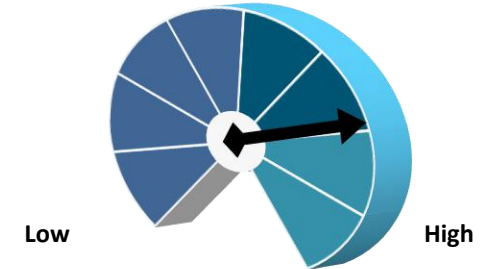
- **Social Trends:** Wearables would enable the collection of health related data, which can be shared by the user with other health enthusiasts via social media platforms.
- **Connectivity & Convergence:** Wearable electronics products and devices enable better connectivity.
- **Health, Wellness and Well-being:** Wearable electronics is useful in remote health monitoring and telemedicine.



Disruption Potential High

Wearable electronics has the ability to extend the user's senses and provide useful information anytime and anywhere.

Tech Adoption



Key Enablers

- **Advent of IoT:** Wearable electronics can be expected to be the gateway to the connected world.
- **New age of computing:** Wearable electronics would establish contextual awareness and pervasive computing.
- **Enhancing human capabilities:** Wearable devices offer a wide range of functionalities in an unobtrusive way to users.

KEY APPLICATION AREAS – BRAINSTORM



Source: Frost & Sullivan

CHALLENGES FOR KEY ENABLING TECHNOLOGIES

