Qatar Foundation – Developing Systems to protect and disseminate research outcomes

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Qatar Foundation Research, Development and Innovation
Qatar

Country Statistics

- Location: Middle East

- Main export goods:
  - LNG (Liquefied Natural Gas)
  - Petroleum products
  - Fertilizers
  - Steel

- GDP: 156.59 billion USD
  - About $70K per capita

- Population:
  - Total – 2258283 (est. July 2016)
  - Qatari’s – 11.6%
  - Expatriates – 88.4%

- Languages:
  - Arabic – official language
  - English – second language
  - Other major languages: Farsi, Urdu, Hindi, Malayalam, Tagalog, Nepali

- Culture: Arabic/Muslim but very cosmopolitan

- Literacy Rate: 97.3%
  - Males – 97.4%
  - Females – 96.8%
Qatar National Aspirations

Economic Development
Development of a competitive and diversified economy capable of meeting the needs of, and securing a high standard of living for, all its people both for the present and for the future. Includes: Sound Economic Management; Responsible Exploitation of Oil and Gas; Suitable Economic Diversification

Social Development
Development of a just and caring society based on high moral standards, and capable of playing a significant role in global partnerships for development

Human Development
Development of all its people to enable them to sustain a prosperous society

Environmental Development
Management of the environment such that there is harmony between economic growth, social development and environmental protection
Qatar

Infrastructural Development

Research Climate

- R&D investment: QNRF spends roughly $100 Million annually; QF supports branch campuses; Govt supports Qatar University, Hamad Medical Corporation and Sidra Women’s and Children’s Research Hospital
- Very little research done by corporate groups – goal to increase

Understanding of IP

- Few IP attorneys, few licensing deals.
- Office spends good deal of time in educational activities.

Economic Development

- Economy dominated by LNG and petroleum
- Big focus on tangibles – i.e. buildings; ports; ships; airplanes
- Focus on sports events – tennis, handball, World Cup in 2022
- Infrastructural building costing $500 million per week
- Efforts to increase industrial activity, productivity and exports
- Great desire to be independent after Saudi/UAE siege
Qatar Foundation is a private, non-profit organization that is supporting Qatar’s transformation to a knowledge-based economy by unlocking human potential.

“Qatar Foundation for Education, Science and Community Development (QF) is a private, non-profit organization that is supporting Qatar’s transformation to a knowledge-based economy by unlocking human potential.”
The Original Vision

His Highness the Amir of the State of Qatar
Sheikh Hamad Bin Khalifa Al-Thani

Her Highness Sheikha Moza bint Nasser
Chairperson, Qatar Foundation for
Education, Science and Community Development

QATAR NATIONAL VISION 2030
Creating a thriving and sustainable post hydrocarbon society in Qatar. The Strategy details how Qatar will deploy its vast revenues from hydrocarbon resources to create the knowledge economy.
Education Pillar
Community Development Pillar
QF Research, Development and Innovation
Qatar Foundation Research, Development & Innovation

Vision
Qatar will be a leading center for research and development excellence and innovation

Mission
- Develop the capabilities of Qatar’s people and institutions
- Build and maintain a competitive and diversified economy
- Improve the health and social well-being of Qatar’s population
- Support Qatar’s distinctive culture and its people’s security
- Preserve and improve the natural and built environment
Focus Research on Impact

From a Strong Foundation to a Focus on Impact

2005 - 2015
Laying R&D Foundation

- Creation of QNRF
- Creation of Branch Campuses
- Founding of Research Institutes
- Creation of QSTP
- Establishment of QF R&D
- Establishment of IPTT
- Initiation of QNRS 2012 and articulation of the Grand Challenges

+2016
Focus Research on Impact

- Identify sectors where Qatar can have a competitive advantage
- Focus funding on these priority areas
- Involve the “end-users” from private & public Sector
- Encourage innovation funding ecosystem
  - Tech Development Fund
  - Research to Startup Program
  - Technology Ventures Fund

25x growth in number of researchers
40x increase number of publications
Knowledge transfer (KT) is a term encompassing a very broad range of activities to support mutually beneficial collaborations between the academic and research community with businesses and the public sector. As a 'contact sport' KT functions best when people meet to exchange ideas thereby realizing fresh opportunities and new ways of thinking.
IDKT Core Functions

Innovation Training & Recognition

Intellectual Property Management

Commercialization and Licensing

Industry Support and Business Development
Activities include:

- **IP Identification** – Invention Disclosure Receipt
- **IP Evaluation**
  - Marketability Assessment
  - Patentability Assessment
  - Ownership Analysis
- **Q-Team Review and Decision**
  - Elect
  - Defer
  - Decline
- **IP Protection & Maintenance**
  - Patent
  - Copyright
  - Trademark
  - Trade Secret

### OVERALL QF IP STATISTICS

<table>
<thead>
<tr>
<th>Year</th>
<th># of IDRs</th>
<th>Current Status of IP Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td># IDRs Elected for IP Protection</td>
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<tr>
<td></td>
<td></td>
<td># IDRs Elected for Patent</td>
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<tr>
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<td># Total Active Patent Applications</td>
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<td></td>
<td># Active Patents Filed</td>
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<td># IDRs Elected for Copyright</td>
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<tr>
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<tr>
<td>2016</td>
<td>107</td>
<td># Unregistered Copyrights</td>
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<tr>
<td>2017</td>
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<td># IDRs Elected for Trademark</td>
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<tr>
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<td># IDRs Elected for Trademark</td>
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<tr>
<td>2019</td>
<td>30</td>
<td># IDRs Elected for Trademark</td>
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<tr>
<td>TOTAL IDRs</td>
<td>575</td>
<td># IDRs Elected for Trademark</td>
</tr>
</tbody>
</table>
Commercialization and Licensing

Commercialization Activities:

- Agreements
  - Non-Disclosure Agreement
  - Open Source License
  - Academic/Research Use License
  - Collaboration License
  - Commercial Use
    - Evaluation License
    - License Option
    - Non-Exclusive License
    - Exclusive License
    - Licenses to Start-ups/Spin-outs
    - Data Set License
- Market review
- Marketing & partnering
- Facilitating IP matters in collaboration opportunities

2019 Quarter One Agreement Activity

Executed
- 2 Licenses – 1 Exclusive to a Start-up & 1 Non-Exclusive Corporate Use
- 10 – Non-Disclosure Agreements

Awaiting signature from Licensee
- 3 – Non-Exclusive licenses
- 2 – NDAs

Under negotiation
- 4 – Corporate Licenses
- 16 – Data Sharing Licenses

In discussion
- 5 – Opportunities being vetted
Stakeholders

Qatar Foundation Entities:

Non-QF Entities:

Qatar Science Club
When Researchers should Submit and Invention Disclosure Report

- Prior to any public disclosures
- Fully workable concept
- Novel compared to existing competing solutions
- Inventive compared to existing competing solutions
- Practical application
Intangible Value

Value created or owned by a business that has no physical form. Historically, firms mostly produced physical products and owned physical property such as factories. This has changed, as it is common for the revenue and assets of a firm to be largely based on things that can't be touched. The following are illustrative examples of intangible value.

- **Customer experience** such as the usability of a device or service on a flight.
- The **identity** and **reputation** of a **brand**.
- A firm with a productive and creative **organizational culture** that regularly produces innovation where others struggle.
- **Talent** in areas such as leadership, design, engineering, marketing and sales.
- **Know-how** Practical knowledge that allows you to do real things.
- **Intellectual property** such as trade secrets, designs, patents, copyright, trademarks and trade dress.
- **Relationships**
  - Relationships with customers, employees, partners and communities.
Submit an Online Disclosure

- To access go to IPTT website on https://qf.wellspringsoftware.net/kms
- To set up user account, contact Nancy on nagoel@qf.org.qa

3 Types of Disclosure Forms:
- Invention Disclosure
- Software Disclosure
- Creative Work or Work of Authorship Disclosure

Sections include:
- Description of the invention/work and potential applications
- Past/planned public disclosures
- Inventors/authors details
- Funding sources and collaborators

Username: X@qf.org.qa
Password: To obtain password, click on 'Forgot Your Password?'
Every approved Disclosure is reviewed on

Ownership Analysis
An analysis and determination of the ownership rights in the IP by reviewing inventorship and collaborative, employment, and/or funding agreements

Patentability Analysis
An analysis of the likelihood of obtaining a patent by conducting patentability or prior art searches performed by specialized patent attorneys

Market Analysis
A preliminary analysis of the commercial potential of the invention using patent analytics tools and market data
Where Do the Research Results Fit on the Technology Readiness Level?
IP Management Workflow

Steps

1. Disclosures are submitted directly to RSIM using the IQ Form on Sophia
2. Approved disclosures are placed on the Q-Team Meeting docket and analysis begins
3. Q-Team meetings are held to discuss status of disclosures in portfolio, and make recommendations on patentability and whether to invest further resources in terms of protection and commercialization

60 DAYS
Analytics Workflow

Request from Stakeholder(s):
- IPM Team
- Strategy Leads/HHO
- Comm. Team
- Clients

Market Search → Define Scope → Analyze Market Information → Q Teams

Yes → Create Presentation – Add ownership & Patentability

No → Create a word/presentation with market analysis recommendation

Deliver report to Stakeholders
What happens after you submit your invention?

Inventor Submits

Review & Analysis Performed by IDKT

Q-Team

Unit Liaison
IDKT
Technical Experts

Inventor Presents (optional)

Elect

Defer
(more info needed)

Decline

Inventor Notified of Decision

Decision made within 60 days of receiving disclosure.
Commercialization Venues

Recent “Sustaining Technologies”
Significant improvements to existing products and process

Ageing innovative technologies
Those with high maintenance and low probable returns

“Disruptive/breakthrough technologies”
Completely new ways of doing things, even those things not done before
Managing Research Results as Intellectual Assets

Examples include:
- Algorithms
- Implementation knowledge
- Production knowledge
- Production methods
- Experiment data
- Manuals

• Drawings and blueprints
• Inventions
• Software tools
• Source code
• Databases
• Utilization knowledge
• Simulations
Research to Startup Program

The Research To Startup is meant to bridge the divide between research and venture creation.

Allowed us to attract entrepreneurs from around the world excited about taking some of our technologies to market.

Program Promise:
- Initial investment
- Easy tech transfer
- Easy incorporation
- QSTP Office space
- Vetted technologies
- Research team
- Business mentors
Results

- 1000’s Leads
- 300+ Applicants
- 100’s Interviews
- 22 Bootcamp EIR’s
- 6 Demo Day Pitches
- 4 Potentially Fundable Startups
TAI will become the standard platform to convert live-action video from 2D to 3D

Types of stereo 3D content
- Live-action
- Animated
- Studio Shot

Prohibitive 3D production cost
Computer generated

TAI’s leadership has extensive experience across media & technology

- Layne Fox, Co-Founder, CEO
  - 18 years’ CTO leading digital media products and technology services
  - Former Disney Digital Distribution, Executive, MBA in Management and Finance, University of Florida

- Les Vezzetti, Head of Product
  - 23 years experience in visual effects, animation, 3D
  - Executive, 3D and VFX production company, partners with Disney & Lucas
  - Member, Visual Effects Society, Producer Guild of America, Motion Picture Color Guild

- Max Grady, Head of Engineering
  - Technology executive with 30 years of experience developing immersive content
  - Creator of Disney’s 3D animation technology

Active advisory board
- John Cassar, Chairman, Producers Guild, Harry Price Council
- Michael Lachter, Partner 20th Century Fox, 20th Century Fox
- Jake Weisner, President 360 VR Media

TAI will target five B2B verticals within the Video/XR supply chain

Business model
- XR Sub-verticals
- Sample customer & partners

SAAS and API licenses for Video/XR sub-verticals

<table>
<thead>
<tr>
<th>Enterprise Services</th>
<th>Content Owners</th>
<th>Channels</th>
<th>Production Software</th>
<th>OEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delphi</td>
<td>FOX</td>
<td>Samsung</td>
<td>Adobe, Samsung</td>
<td>VR</td>
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<tr>
<td>Microsoft</td>
<td>houzz</td>
<td>unity</td>
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<td>Oculus</td>
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<tr>
<td>Discovery</td>
<td>Six Flags</td>
<td>NFL</td>
<td>RYOT</td>
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</tbody>
</table>

TAI’s software achieves automated 2D-to-3D conversion at < 5% of the cost of alternatives

- Enables mass-production of immersive content
- Variable cost < 5% of current alternatives
- Converts LIVE ACTION video, from any 2D source: 1080P & HD 1080i
- Real-time - supports live broadcast
- 3D-to-depth map output

- Nadine Al-Rashed, PhD, Sr. Visualisation Researcher, I3D
- Tapan Katona, Chief Development Officer, DigitalNet Global
- Scott Connelly, Vizrt America, The Artistic Immersive
Qualifications for RTS Participation

• High Technology Readiness Level (TRL)
• Fully workable technology/software
• Stand Alone platform technology
• Practical application
• Broad market reach
• Some usage track record
• Novel compared to existing competing solutions
• Inventive compared to existing competing solutions
• No uncovered third party obligations
  • Open Source permissive license okay; GPL not okay
• Enhancing QF’s ability to innovate
  • improving internal policies and procedures
• Introducing new channels for collaboration with private sector
  • consultancy services
  • fees-for-services
  • data and information
• Innovation Culture Development Support
  • Inventors Training and Guidance
    • Intellectual Property
    • Market Strategy Development
      • Research Collaborators
      • Potential Licensees
  • Recognition and Rewards
  • Revenue Distribution
Key Challenges

- Lack of timely submission of or incomplete Invention Disclosure Reports (IDRs)
- Low TRL in inventions – Could use more Technology Development Funds
- Unreasonable Researcher Expectations in Licensing activities
- Need for understanding about need for NDAs and securing confidentiality
- Need for universal understanding of individual groups activities in innovation ecosystem development
Questions