Commercialization Procedures
(Spin-off Management and Start-up Companies)

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Spin-offs and Start-ups

- **Start-up Company**
  - company in the first stage of operations
  - often initially bank rolled by entrepreneurial founders
  - attempt to capitalize on developing product or service & looking for market
  - due to limited revenue and/or high costs, most of such small scale operations not sustainable in the long term without additional funding from venture capitalists
  - May or may not be built around technology licensed from institution

- **Spin-off Company**
  - Company with limited operating history
  - generally newly created
  - helmed by staff/researchers from institute
  - set up to commercialise IP from institution
  - is in a phase of development and searching for markets
  - technology is in the early stage
Spin-off and Start-ups

Questions asked by every start-up and early stage company:-

- How do I raise money necessary to start/grow my company?
- Would my “product” interest anyone?
- Who do I approach?
- How to demonstrate my “product” is “the best solution” to what is available in the market now?
- What security can I offer?
- What conditions and obligations would the Founders, management or the company be subjected to?
1. **Early identification and filing of patent applications of novel technologies with high commercial potential**
   - Concerns
     a. Is the new technology enabled?
     b. First mover advantage
     c. Market readiness for early adoption
     d. Need for exemplification and additional data – provisional applications to buy time?
     e. Technology/product life-cycle
     f. Are the researchers eager to publish findings in a journal article?

2. **Opt to further develop new technology in-house before lodging patent applications**
   - Concerns
     a. Trigger to lodge patent applications
     b. First to file system in major jurisdictions (except USA)
     c. Novelty issues
     d. Width and scope of protection – claim limitation

3. **Building a portfolio of patents – patent walls**
   - Concerns
     a. Difficult to manage the speed and outcome of R & D
     b. Cost to maintain such a portfolio of patents
     c. Intensive TICI required
Spin-off Management

Start up Management - Company development
- Due diligence/ Valuation
- Financial model & analysis
- Dev/ Validation (business model)
- Hiring of management team
- Coach and handhold the management team
- Business Plan Workshop

Fund Raising
- Business Plan Development
- Refining
  • Elevator pitch
  • Business plan
- • Sourcing and qualifying investors
- VC Forum
- Investor pitching
- Negotiation with investors
- Business development and networking

Start Up Formation
- Deal sizing and negotiation
- Advising spin-offs of industry practices during term sheet negotiation
- Coach and handhold the management team through
  • Licensing
  • Shareholders agreement
  • Investment agreement
  • etc
- Business Plan Workshop

Post Spin-Off Management
- Board and Corp Rep appointment
- Portfolio Monitoring
- Founders club
- Mentorship
- Performance measures
- Business Services support
Exploit Technologies invests upfront and takes development risks.

SME has option to license when technology is proven but no obligations if the project fails.

Project managed by Exploit Technologies with requirements from potential licensee(s).

Companies that license technologies need to invest less upfront and pay royalties only as they generate revenue.
Flagship Program

• Identify novel technologies earlier in the research value chain for larger and more impactful outcome through:
  – building strong patent portfolio
  – infusing commercial focus earlier in R&D
  – inter-RIs and cross-council collaborations

• Dedicated program/project managers

• Early interactions with industry: roundtables, industry forums
Emerging technologies funded and developed to near commercial readiness; significant reduction in technical risks through beta trials and validations

Desired Outcome:

- More & stronger licenses
- Spawn new and sustainable local technology-based industries and promote technology start-ups
COT and Flagship Pipeline

38 COT Projects

24 Flagship Projects

New COT

New Flagship

New COT

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38 COT Projects

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COT and Flagship Pipeline

A*STAR – Fostering world-class scientific research and talent for a vibrant knowledge-based Singapore

40 Full Licenses Total Contract Value

At S$44 Million

8 New Spin-off Companies in 2008

COT and Flagship Pipeline

Tech & Biz Incubation

Commercia lization

IP Management

TICI

Clean Energy

Medical Technology

Business and Technology Incubation

Wireless Communications

Nano technology

Electronics
• Grooms researchers into successful technopreneurs

• Takes a proactive role in strategic planning to building business network

• Provides business support such as marketing, business development and networking

• Guides and develops start-ups to attract venture capitalists and angel investors
Challenges faced by Spin-offs

1. Strength of IP
2. Avenues to generate more IP
3. Avenues to raise more funds
4. Conflict of interest
5. Management team
6. Consultancy
7. Exit strategy
Those who made it

- Sold in Dec 07 for $19.58m
  - Exploit backed the management team
  - Exploit facilitated the acquisition

Bilcare buys nanotech firm for $19.58m

Acquisition one of the biggest buyouts of an A*Star spin-off
D-SIMLAB

2010 Red Herring Global Top 100 Tech Startup

Discrete simulation engine that analyse and predict performance of simulation network

- Founded in 2006 with licensed technology from SIMTech
- Attracted investors: Imprimatur Capital and Tan Gee Beng Private Limited
- Addressable market size US$800M
  - Optimisation of the ‘rotatable’ (repairable) airline parts inventory
  - Optimisation of semiconductor manufacturing production logistics

OUTCOME
- Selected as a “2010 Red Herring Global Top 100 Tech Startup”
- Secured EADS, OEM Services & ST Aerospace as customers
- >5x revenue growth since inception

D-SIMSPAIR

Simulation based spare parts planning and optimization system for aerospace industry
=> Cost savings of up to 40%

D-SIMCON

Simulation-based software suite for high-fidelity decision making in semiconductor manufacturing
=> Cost savings of up to 10%

A*STAR – Fostering world-class scientific research and talent for a vibrant knowledge-based Singapore
Since our inception in 2002, we have trained for the industry some 100 tech transfer professionals.

- Business revenue generated from licensed A*STAR's technologies over S$500M

- Total market value of our startups S$75M
Thank you!

A*STAR – Fostering world-class scientific research and talent for a vibrant knowledge-based Singapore