



江泰保险经纪股份有限公司

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Commercial Space & Insurance In Chinese Market

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- I. Chinese Space Insurance History
- II. Chinese Space Insurance Market
- III. Commercial Space Risk Identification
- IV. Commercial Space Insurance +



1.Chinese Space Insurance History





The First Space Insurance

- 1965, Intelsat I (“Early Bird”)
- Limited Risk Assessment Ability and Capacity
- 5M USD Pre-launch, 25M USD Third Party Liability

Deductible Mode

- Mid-1970s
- Insurers Began to Provide Launch and In-orbit Coverage
- 1 Deductible in 5 Launches



Stumble Forward

- Late 1970s- Early 1990s
- 1977, OTS I (29M USD Losses)
- 1979, SATCOM III (76M USD Losses)
- Package Insurance Emerging

Diversified Development

- 1990s-
- More Participators
- More Coverage lines
- More Cooperation mode



2. Chinese Space Insurance Market



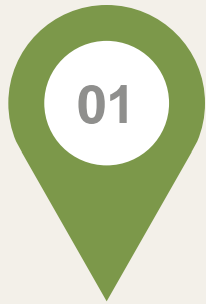


2.1.Development History





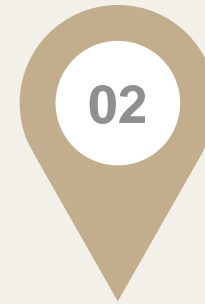
Initial Stage



01

1986:

- Dong Fang Hong II Project, Launched by LM-3



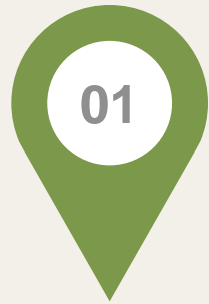
02

1990s:

- Less Participators
- Limited Capacity
- Rely on International Re-insurance Support



Chinese Space Insurance Consortium



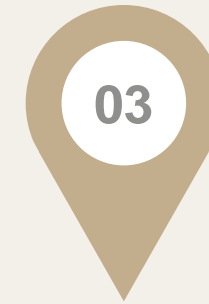
1996, Two Failures,
Intelsat 708 (February)
and ChinaSat-7 (June)

International Reinsurance
Market Rejected Chinese
Risks



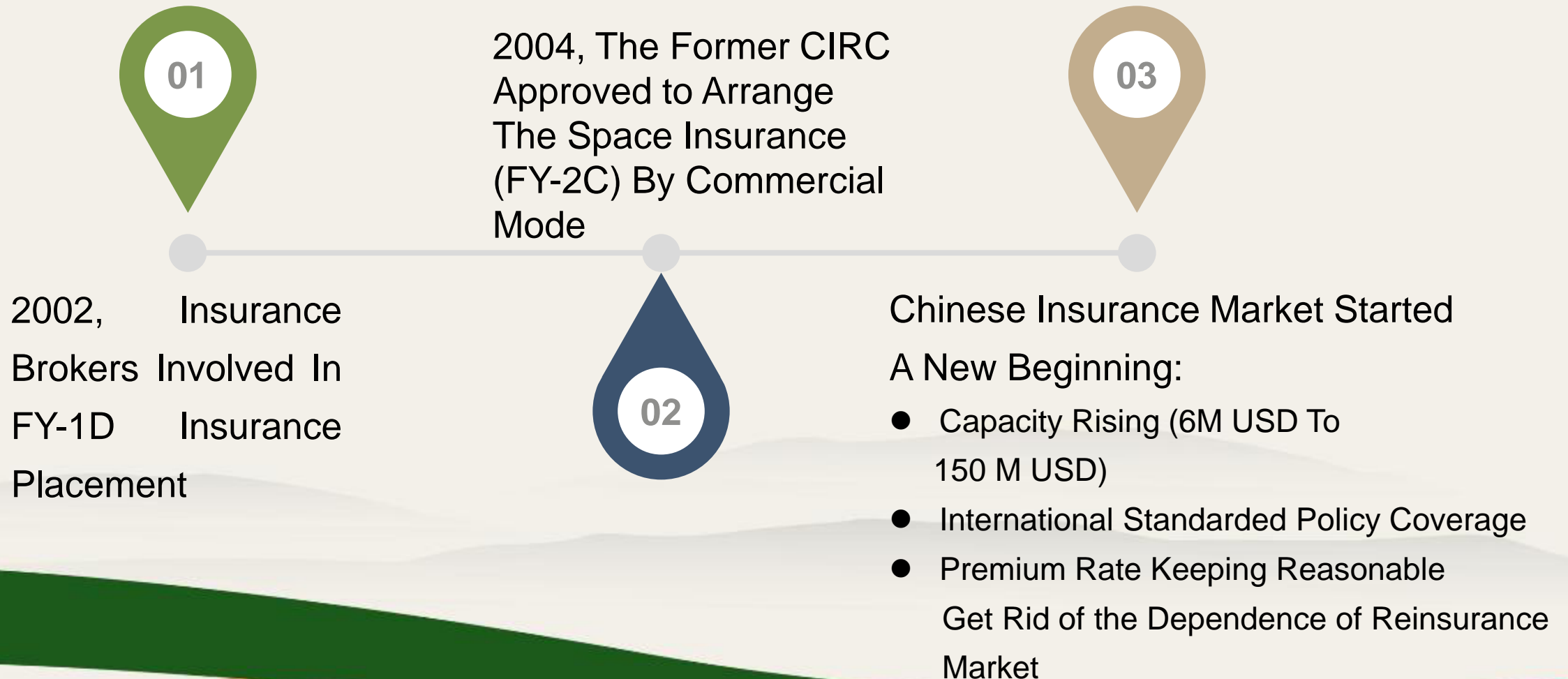
1997, 9 Insurers Composed
The Chinese Space
Insurance Consortium

- Cultivated The Domestic Market To Some Extent
- Lack Competition
- High Rate
- Low Coverage





Market-Oriented Space Insurance





2.2. Chinese Space Insurance Project





2.2.1. Traditional Space Project





Traditional Space Project

- Government-led Projects
 - Conducted by National Sectors
 - Mostly Remote Sensing Satellites
- State-owned Commercial Projects
 - Conducted by State-owned Company
 - Communication Satellites & Remote Sensing Satellites



- Government-led Projects
 - Great Scale
 - Limited Budget
 - Procurement Mode
 - Government Procurement
 - Open Tendering
 - Focus on Domestic Market



Government-led Projects (2014-2018)

No	Project	LV	Sum Insured	Coverage	Launch Date
1	FY-2G (风云二G)	LM-3A	CNY623000000	launch & in orbit TPL	2014.12
2	Dark Matter Particle Detection Satellite (暗物质 粒子探测卫星)	LM-2D	CNY330000000	TPL	2015.12
3	Shijian-10 Returning Satellite (实践十号返回式 卫星)	LM-2D	CNY330000000	TPL	2016.4
4	Quantum Science Experiment Satellite (量子 科学试验卫星)	LM-2D	CNY330000000	TPL	2016.8
5	ZY3-02 (资源三号02星)	LM-3A	CNY757,870,00 0	launch & in orbit TPL	2016.5



Government-led Projects (2014-2018)

No	Project	LV	Sum Insured	Coverage	Launch Date
6	TK-1 (天鲲一号)	KT-2	CNY330000000	TPL	2017.3
7	KZ serise launch vehicles (快舟系列火箭)	KZ-1 KZ-11	CNY330000000	Pre-launch launch & in orbit TPL	2017.9
8	FY-3D (风云三号D星)	LM-4C	CNY947,420,000	Launch & 3 y in orbit TPL	2017.11
9	GF-1 02/03/04 (高分一号02/03/04)	LM-4C	CNY1,331,810,000	Launch & in orbit TPL	2018.3
10	FY-2H (风云二号H星)	LM-3A	CNY623000000	Launch & 3 years TPL	2018.6

Government-led Projects (2014-2018)

No.	Project	LV	Sum Insured	Coverage	Launch Date
11	HY-1C (海洋一号C星)	LM-2C	CNY407,000,000	Launch & 5 y in orbit TPL	2018.9
12	HY-2B (海洋二号B星)	LM-4B	CNY768,000,000	Launch & 5 y in orbit TPL	2018.9
13	HY-1D (海洋一号D星)	LM-2C	CNY407,000,000	Launch & 5 y in orbit TPL	2019
14	HY-2B (海洋二号B星)	LM-2C	CNY745,000,000	Launch & 5 y in orbit TPL	2019



- State-owned Commercial Projects
 - Great Scale
 - Procurement Mode
 - Flexible
 - Focus on Cost
 - Open to Both Domestic & International Market



State-owned Commercial Projects (2014-2018)

No.	Projects	LV	Sum Insured	Coverage	Launch Date
1	Belintersat-1 (白俄罗斯通信卫星)	LM-3B	USD235,000,000	launch & 1 year in orbit TPL	2015.1
2	Apstar-9 (亚太九号通信卫星)	LM-3B	USD222,069,000	launch & 1 year in orbit TPL	2015.10
3	Laosat-1 (老挝一号通信卫星)	LM-3B	USD 180,000,000	launch & 1 year in orbit TPL	2015.11
4	GJ-1 01/02 (高景一号01/02)	LM-2D	CNY360,000,000	launch & 1 year in orbit TPL	2016.12
5	Chinasat16 (中星16)	LM-3B	USD 150,000,000	launch & 1 year in orbit TPL	2017.4



State-owned Commercial Projects (2014-2018)

No.	Projects	LV	Sum Insured	Coverage	Launch Date
6	Chinasat 9A (中星9A)	LM-3B	USD215,000,000	launch & 1 year in orbit TPL	2017.6
7	Alcomsat-1 (阿尔及利亚 通信卫星)	LM-3B	USD 210,000,000	launch & 1 year in orbit TPL	2017.9
8	VRSS-2 (委内瑞拉遥感 卫星二号)	LM-2D	USD 170,000,000	launch & 1 year in orbit TPL	2017.10
9	GJ-1 03/04 (高景一号)	LM-2D	CNY360,000,000	launch & 1 year in orbit TPL	2018.1
10	Apstar 6C (亚太6C)	LM-3B	USD188,000,000	launch & 1 year in orbit TPL	2018.5
11	PRSS-1 (巴基斯坦遥感 卫星)	LM-2C	USD 120806283	launch & 1 year in orbit TPL	2018.7



State-owned Commercial Projects (2014-2018)

No.	Projects	LV	Sum Insured	Coverage	Launch Date
12	Saudi 5A& 5B (沙特卫星)	LM-2D	USD22,000,000	launch TPL	2018.12
13	Hongyun-1 (虹云一号试验星)	LM-11	USD 50,000,000	TPL	2018.12
14	Hong Yan (鸿雁卫星)	CZ-2D	USD10,000,000	TPL	2018.12



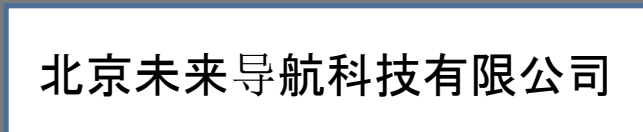
2.2.2. Emerging Commercial Space Project





Emerging Commercial Space Project

- First Insurance Placement
 - 2015, Jilin-1 (CGSTL)
- Project Types
 - Smallsat, Minisat, Microsat, Nanosat, Picosat, Femtosat
 - Small Size Launch Vehicle
- Insurance Demand
 - TPL
 - Launch+In-orbit
 - Pre-Launch





Commercial Space Project (2015-2018)

No.	Projects	LV	Sum Insured	Coverage	Launch Date
1	Jilin-1 Optical A LQSat Jilin video-01 Jilin video-02 (吉林一号)	LM-2D	USD10,000,000 Per Sat	launch & in orbit TPL	2015.10
2	Jilin video-03 (吉林一号视频03星)	KZ-1A	USD10,000,000	launch TPL	2017.1
2	Kaidun (凯盾一号)	KZ-1A	USD10,000,000	TPL	2017.1
3	OVS 1A/1B (珠海一号1A/1B)	CZ-4B	USD10,000,000 Per Sat	TPL	2017.6
4	Jilin video 04-06 (吉林一号视频04-06星)	LM-6	CNY 70,000,000	launch & in orbit TPL	2017.11
5	Head-1 (和德一号)	CZ-4C	USD10,000,000	TPL	2017.11



Commercial Space Project (2015-2018)

No.	Projects	LV	Sum Insured	Coverage	Launch Date
6	Jilin video 07/08星（吉林一号视频04-06星）	LM-11	CNY 60,000,000	launch & in orbit TPL	2018.1
7	TY-2、TY-6（潇湘二号、六号）	CZ-11	USD10,000,000 Per Sat	TPL	2018.1
8	Shaoningxing-1（少年星一号）	CZ-2D	USD10,000,000	launch & in orbit TPL	2018.2
9	FengMaNiu-1（风马牛一号）	CZ-2D	USD10,000,000	TPL	2018.2
10	OVS-2A OHS-2A OHS-2B OHS-2C OHS-2D（珠海二号）	CZ-11	USD10,000,000 Per Sat	launch & in orbit TPL	2018.4
11	Experiment（飞行验证载荷）	OS-X0	CNY20,000,000	TPL	2018.5



Commercial Space Project (2015-2018)

No.	Projects	LV	Sum Insured	Coverage	Launch Date
12	Luojia-1 (珞珈一号01星)	CZ-2D	USD10,000,000	TPL	2018.6
13	Experiment (飞行验证载荷)	OS-X1	CNY20,000,000	launch TPL	2018.9
14	Xiangrikui-1 (向日葵一号)	KZ-1A	USD10,000,000	Pre-launch launch & in orbit TPL	2018.9
15	TY1-02 TY4-02 TY1-03 TY4-01 (潇湘一号)	CZ-2C	USD10,000,000 Per Sat	launch & in orbit TPL	2018.10
16	Future-1 (未来一号)	ZQ-1	USD50,000,000	launch TPL	2018.10



Commercial Space Project (2015-2018)

No.	Projects	LV	Sum Insured	Coverage	Launch Date
17	Jiading 1 (嘉定一号)	CZ-2D	USD10,000,000	TPL	2018.11
18	Tianzhi 1 (天智一号)	CZ-2D	USD10,000,000	TPL	2018.11



2.3 Space Insurance Capacity and Rate





Average Rate

International

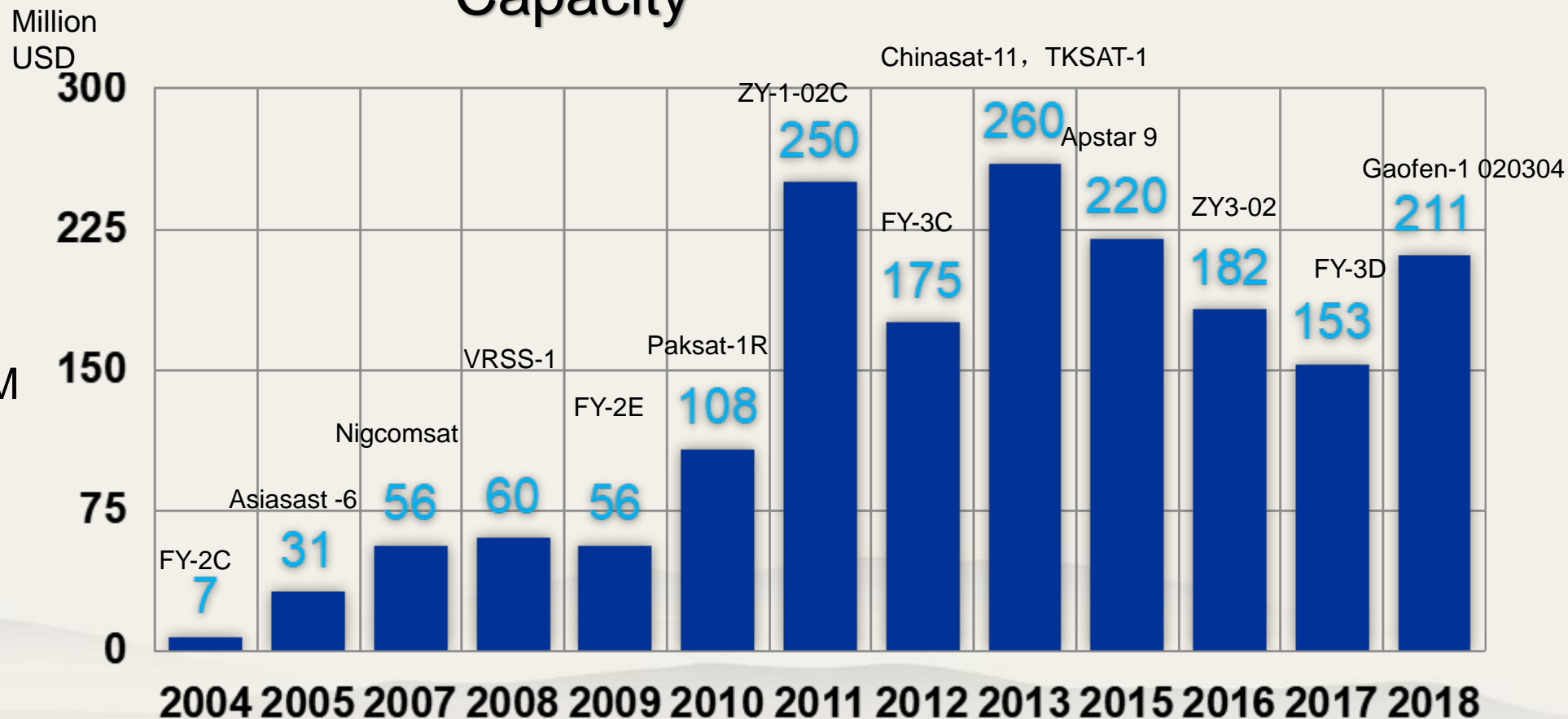
coverage	2016	2018
launch+1Y in-orbit	7%	4%
in-orbit	0.8%	0.5%

China

coverage	2016	2018
launch+1Y in-orbit	5%	3.5%
in-orbit	0.6%	0.3%

Capacity

- Global Market
 - Capacity: \$1 B
- Chinese Market
 - 30 Participators
 - Capacity:\$150 M





2.3 Space Insurance Claim





Year	Insured	Program	Sum insured	Loss	Tpye
2006	China Great Wall Industry Corporation	SinoSat-2 Launch +1Y	USD 120M	USD 120M	Total Loss
2007	China Great Wall Industry Corporation	Nigcomsat-1 Launch +1Y	EUR 123M	EUR 46M	Partial Loss
2010	China Great Wall Industry Corporation	SinoSat-6 Launch +1Y	USD 200M	USD 23M	Partial Loss
2017	China satellite Communication s Co.,Ltd	Chinasat 9A	USD 215M	USD 150M	Partial Loss



3. Commercial Space Risk Identification





3.1 Risk Point





Risk Point

- On the Infrastructure Stage
- High Investment, High Operational Risk
- Insufficient Disclosure of Public Information



- On the Infrastructure Stage
 - Satellites and Launch Vehicle are Mostly Technically Validated
 - New Functions
 - Video payload、Flicker payload、Internet of Things payload、Self-timer payload and Space VR payload ,etc.
 - Lack of Effective Verification of the Manufacturing Quality Control of Satellites and Launch Vehicles



- High Investment, High Operational Risk
 - 17 Chinese Commercial Space Companies Received More Than CNY2.16 Billion Investment (Investment Institution)
 - China's Private Investment in the Space Sector has exceeded CNY13 Billion During the First Three Quarters of 2018 (SpaceAngels)
 - Long Project Cycle
 - Employee Turnover



- Insufficient Disclosure of Public Information
 - Lack of Underwriting Data and Experience
 - Insurers Hold Conservative Attitude



4. Commercial Space Insurance +





- Key Points
 - Launch Vehicle: Manufacture
 - Satellite: Application

Manufacture

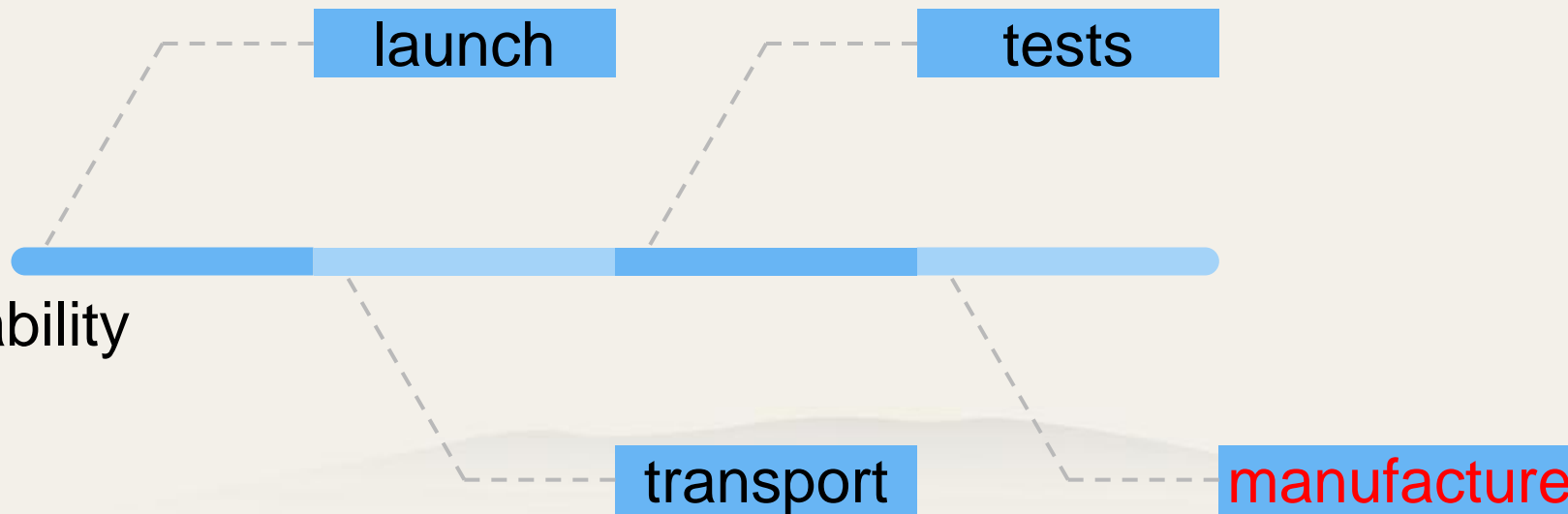
Insurance



Establish Product Reliability



Avoid Risks in Each Stage

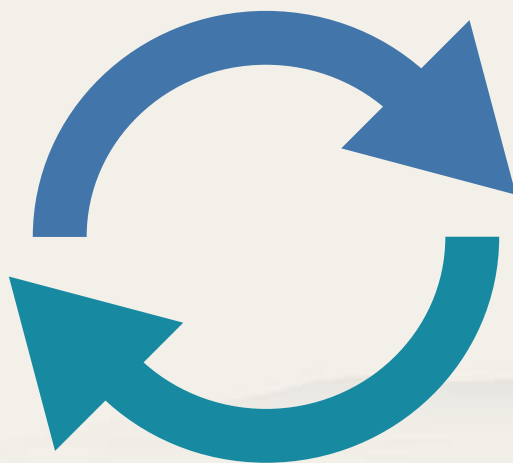


Application

Combine satellite application with traditional risk management of insurance industry



application



Insurance covers all risks of the satellite from launch to commercial operation in orbit

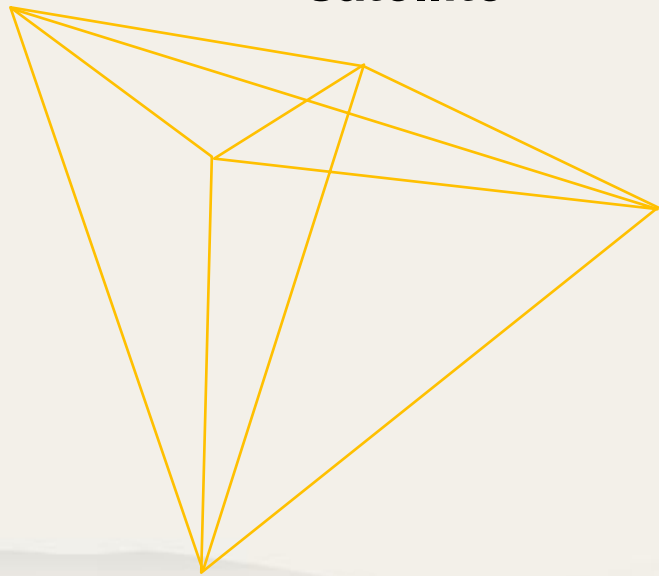
insurance



Insurance Broker

insurance

satellite



launch
vehicle



Reasonable insurance contracts and rates



seeking potential customer

insurance broker



Conclusion

- Chinese space market is young with promising future
- Insurance should play an important role in the risk management of space projects
- Insurance market is stable, but there is underlying fragility
- Market becomes a little cautious after the claims
- New launchers will become a supplement to the launch market
- Expect more interaction cooperation between insurance and space industries



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Thank You