نقش دولت در توسعه اکوسیستم رایانش ابری در ایران

مرتضی سرگلزایی جوان

جامعه آزاد رایانش ابری ایران

مقدمه

- دکتر کریم مجتهدی (از اساتید فلسفه دانشگاه تهران): "عمده موانع توسعه علمی ما، موانع فرهنگی است و اگر این موانع فرهنگی برطرف شود، راه برای توسعه علمی خودبخود باز می شود."

بحث آزاد

1. بحث آزاد و بدون موضوع (اتلاف وقت)
2. بحث آزاد همراه با تعیین موضوع در جلسه (بداهه)
3. بحث آزاد همراه با تعیین موضوع قبلی (BrainStorming)
4. بحث آزاد همراه با تعیین موضوع قبلی و ارایه (تصمیم سازی)
5. بحث آزاد + موضوع قبلی + ارایه + مستندسازی باز (تصمیم گیری)
6. گفتگوی باز و دریافت بازخورد روی مستندات و تصمیمات قبلی (بهبود)

FASTER 2013

- نمونه فعالیت های در حال انجام بر اساس مدل باز در سطح کلان (در آمریکا)

1.3.1 Faster Administration of Science and Technology Education and Research (FASTER) Community of Practice (CoP)

FASTER, supported by the NITRD NCO, communicates with the White House Office of Management and Budget (OMB) and the Federal Chief Information Officers (CIO) Council concerning IT R&D matters that are of general interest to Federal agencies. FASTER's goal is to enhance collaboration and accelerate agencies' adoption of advanced IT capabilities developed by Government-sponsored IT research. The group is focused on the following strategic themes:

- Cloud computing
- Semantic web and ontology technology
- Open government
- Emerging technologies
- Sharing knowledge, ideas, and best practices

FASTER 2014

Faster Administration of Science and Technology Education and Research (FASTER)

Participating Agencies: DARPA, DoD Service Research Organizations, DOE/SC, DHS, NARA, NASA, NIH, NIST, NOAA, OSD, and VA

The Federal CIO Council, under the leadership of OMB, coordinates the use of IT systems by federal agencies. NITRD, under the leadership of OSTP, coordinates federally supported IT research. The FASTER Community of Practice (CoP) is an association of science agency CIOs and/or their advanced technology specialists, organized under NITRD to improve the communication and coordination between the two interagency entities. The primary focus of FASTER is on the IT challenges specific to supporting the federal scientific research enterprise.

Strategic Priorities

The FASTER CoP has identified several themes to promote the use of advanced IT systems in support of science agency research and development missions. Through coordination and collaboration, FASTER seeks to share information on protocols, standards, best practices, technology assessments, and testbeds, and to accelerate deployment of promising research technology. Consensus among the participants determines the focused theme activities. FASTER serves as a bridge between basic research and operational entities, especially in crosscutting domains. The group's activities are focused on the following strategic themes:

- Cloud computing
- Ontology technology
- Wikis and open collaboration
- EarthCube
- Emerging technologies
- Sharing knowledge, ideas, and best practices

FASTER 2015

Faster Administration of Science and Technology Education and Research (FASTER)

Participating Agencies: DoD Service Research Organizations, DOE/SC, DHS, NARA, NASA, NIH, NIST, NOAA, NSF, OSD, and VA

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- Cloud computing
- Open government: open data and public access
- Accelerated communication

اکوسیستم رایانش ابری
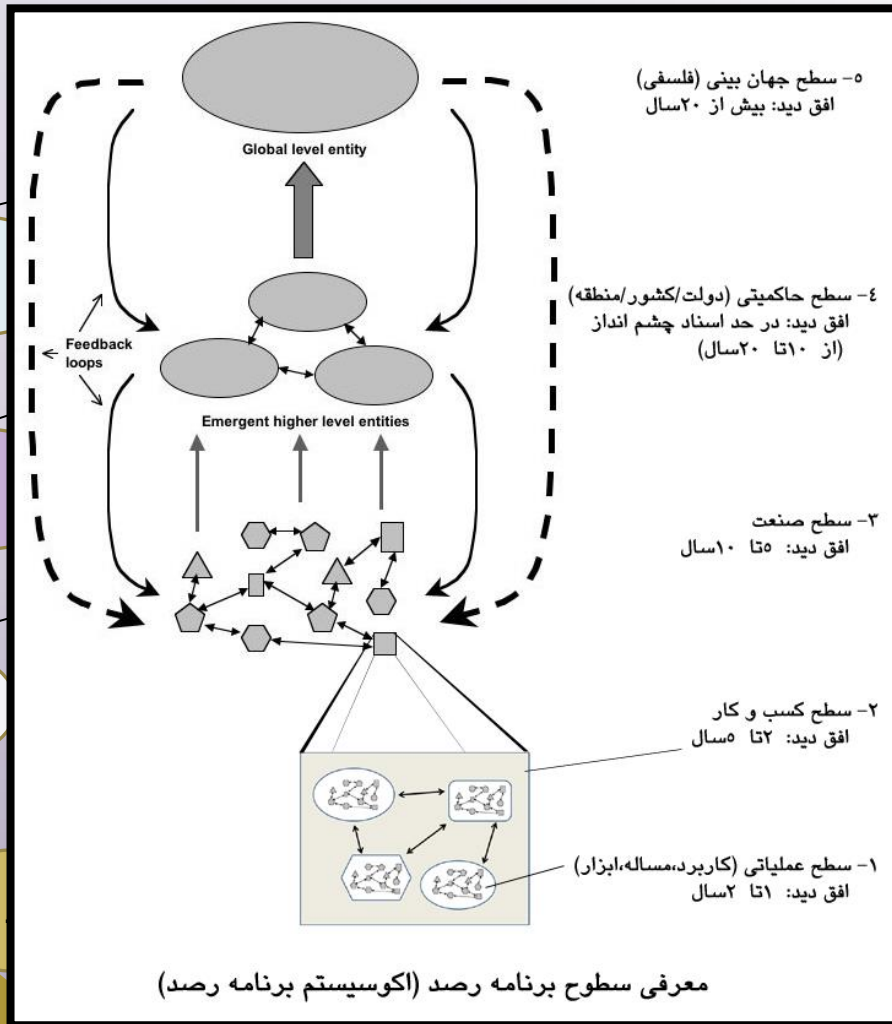
1. سطح عملیاتی : ۱ تا ۲ سال
2. سطح کسب و کار: ۲ تا ۵ سال
3. سطح صنعت: ۵ تا ۱۰ سال
4. سطح حاکمیتی: ۱۰ تا ۲۰ سال
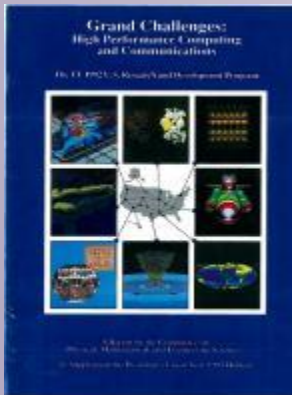5. سطح جهان بینی (فلسفی) : بیش از ۲۰ سال

مدل های توسعه فناوری اطلاعات

NITRD (1992~2015)

High-Performance Computing Act of 1991
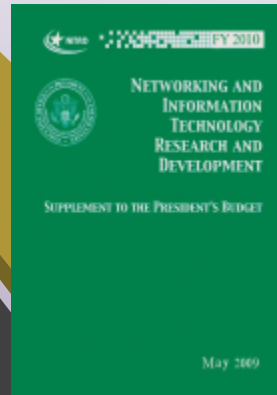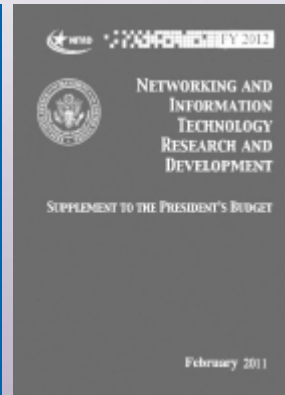*"Continued United States leadership in high-performance computing."*
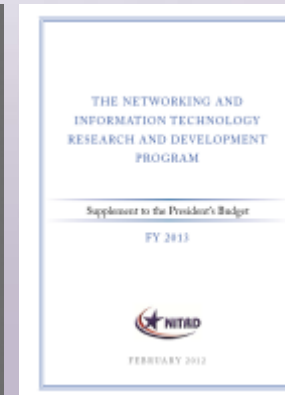

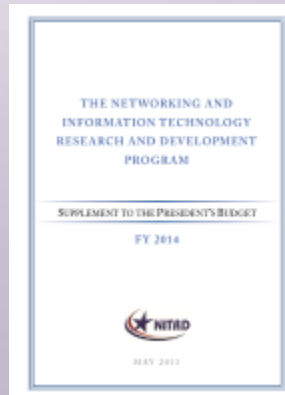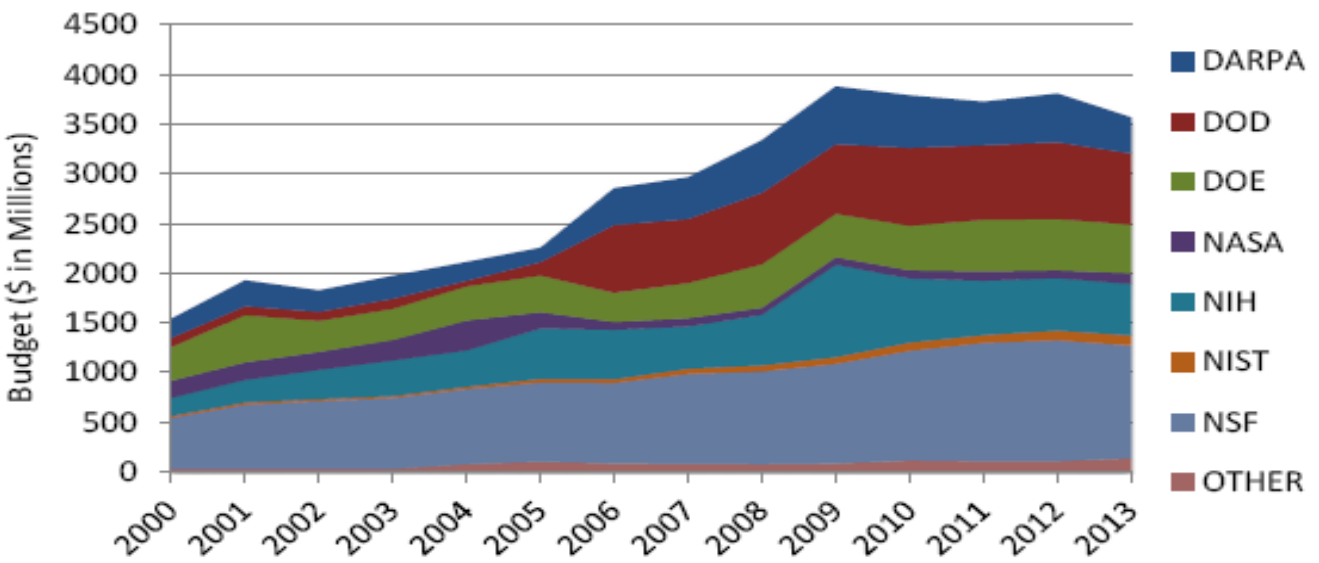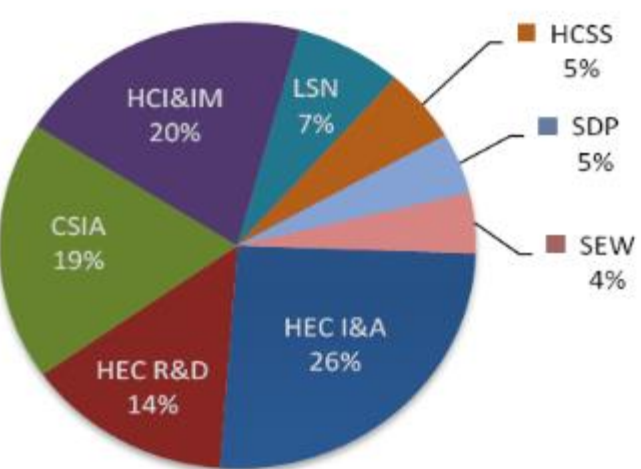... 1992   2009   2010   2011   2012   2013   2014   2015

NITRD - 2015

Agency/ Program Component Area		Cybersecurity & Information Assurance (CSIA)	High Confidence Software & Systems (HCSS)	High End Computing Infrastructure & Applications (HEC I&A)	High End Computing Research & Development (HEC R&D)	Human Computer Interaction & Information Management (HCI&IM)	Large Scale Networking (LSN)	Social, Economic, & Workforce Implications of IT (SEW)	Software Design & Productivity (SDP)	Total[6]
NSF	FY 2013 Actual	97.9	87.4	235.6	112.2	284.8	119.0	112.6	83.7	1,133.1
	FY 2014 Estimate	106.6	91.4	222.8	122.3	283.1	127.9	118.0	87.5	1,159.7
	FY 2015 Request	102.5	91.0	215.5	128.8	284.5	126.2	122.4	86.7	1,157.6
DoD[7,8]		174.6	13.2	80.7	248.3	72.3	109.0	0.1	17.9	716.2
		192.1	62.7	89.8	261.4	101.5	80.5	0.1	14.6	802.8
		168.4	39.3	81.1	212.5	131.5	62.7		8.6	704.2
DOE[9]		32.6	2.5	307.5	80.1		43.4	6.0		472.1
		36.7	7.5	343.2	107.4		71.2			566.0
		30.0	15.0	365.6	131.2		72.1	6.2		620.1
NIH			20.0	189.0	17.0	214.0	3.0	23.0	56.0	522.0
			20.0	195.0	17.0	220.0	3.0	24.0	57.0	536.0
			20.0	195.0	17.0	220.0	3.0	24.0	57.0	536.0
DARPA		223.0			57.8	64.0	15.6			360.4
		293.5	4.5		40.5	91.2	7.5			437.2
		286.6	9.0		27.7	70.3				393.5
NIST[10]		49.7	8.7	15.3	5.6	11.5	6.8	0.4	4.3	102.2
		59.7	11.5	16.0	5.6	11.5	6.8	4.4	4.4	119.8
		59.7	19.0	16.0	5.6	11.5	6.8	4.4	4.4	127.2
NASA			17.2	62.7	0.4	17.0	1.0		9.6	107.9
			13.1	73.2	0.6	17.0	1.0		10.8	115.7
			12.4	67.3	1.0	17.0	1.0		10.5	109.2
DHS		75.3				3.2		4.0		82.5
		77.8				10.0		3.8		91.6
		67.5				7.2		4.4		79.1
NOAA				18.1	0.2	0.5	2.7		0.7	22.2
				21.4	0.2	0.5	3.3		0.7	26.1
				24.7	0.2	0.5	3.3		0.7	29.4
AHRQ						25.1	0.5			25.6
						29.1	0.5			29.6
						23.0	0.5			23.5
DOE/ NNSA[10]				9.0	5.0				3.0	17.0
				9.0	5.0				3.0	17.0
				8.9	7.8				2.7	19.4
EPA	FY 2013 Actual				3.2	3.0				6.2
	FY 2014 Estimate				3.3	3.0				6.3
	FY 2015 Request				3.3	3.0				6.3
DOT[11]			1.5							1.5
			1.5							1.5
NARA							0.2			0.2
							0.2			0.2
							0.2			0.2
Total FY 2013 Actuals[6]		653.0	149.1	917.9	529.8	695.6	300.9	149.1	172.2	3,567.6
Total FY 2014 Estimates[6]		766.6	212.3	970.3	563.3	767.1	301.6	153.3	174.9	3,909.4
Total FY 2015 Requests[6]		714.7	207.2	974.1	535.0	768.5	275.6	164.1	167.9	3,807.2

Budget Trends by Agency — DARPA, DOD, DOE, NASA, NIH, NIST, NSF, OTHER (2000–2013); Budget ($ in Millions)

FY 2015 Budget Requests by PCA — HCI&IM 20%, LSN 7%, HCSS 5%, SDP 5%, SEW 4%, HEC I&A 26%, HEC R&D 14%, CSIA 19%

FY 2015 Budget Requests by Agency — NIH 14%, DARPA 10%, NIST 3%, NASA 3%, OTHER* 4%, NSF 30%, DoD 19%, DOE 17%
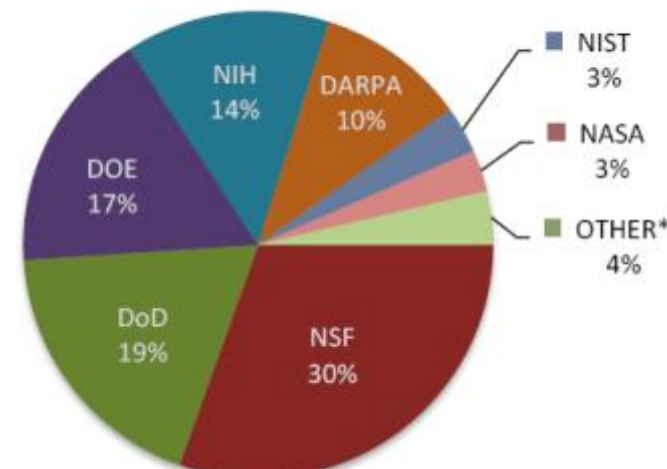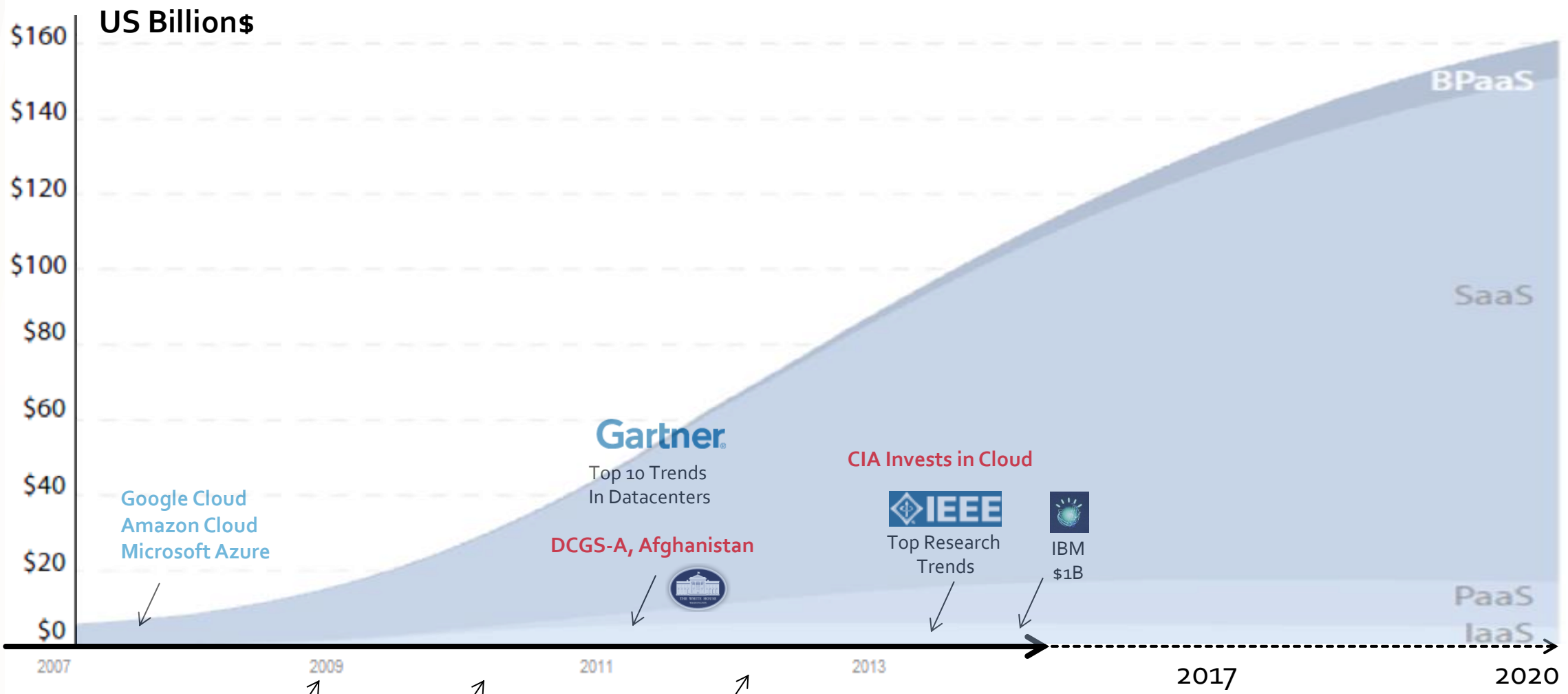
حوزه های فعالیت در اکوسیستم رایانش ابری

- ارایه سرویس یا محصول (صنعت)
- توسعه دانش و فناوری (صنعت + دانشگاه)
- بستر سازی + مصرف + توانمندسازی (دولت)

مدل برنامه ریزی؟

- لزوم برنامه ریزی در سطح اکوسیستم :
- (و نه یک محصول یا سرویس)

Companies

Government

Cloud Ecosystem

Supporting Organizations

Academia
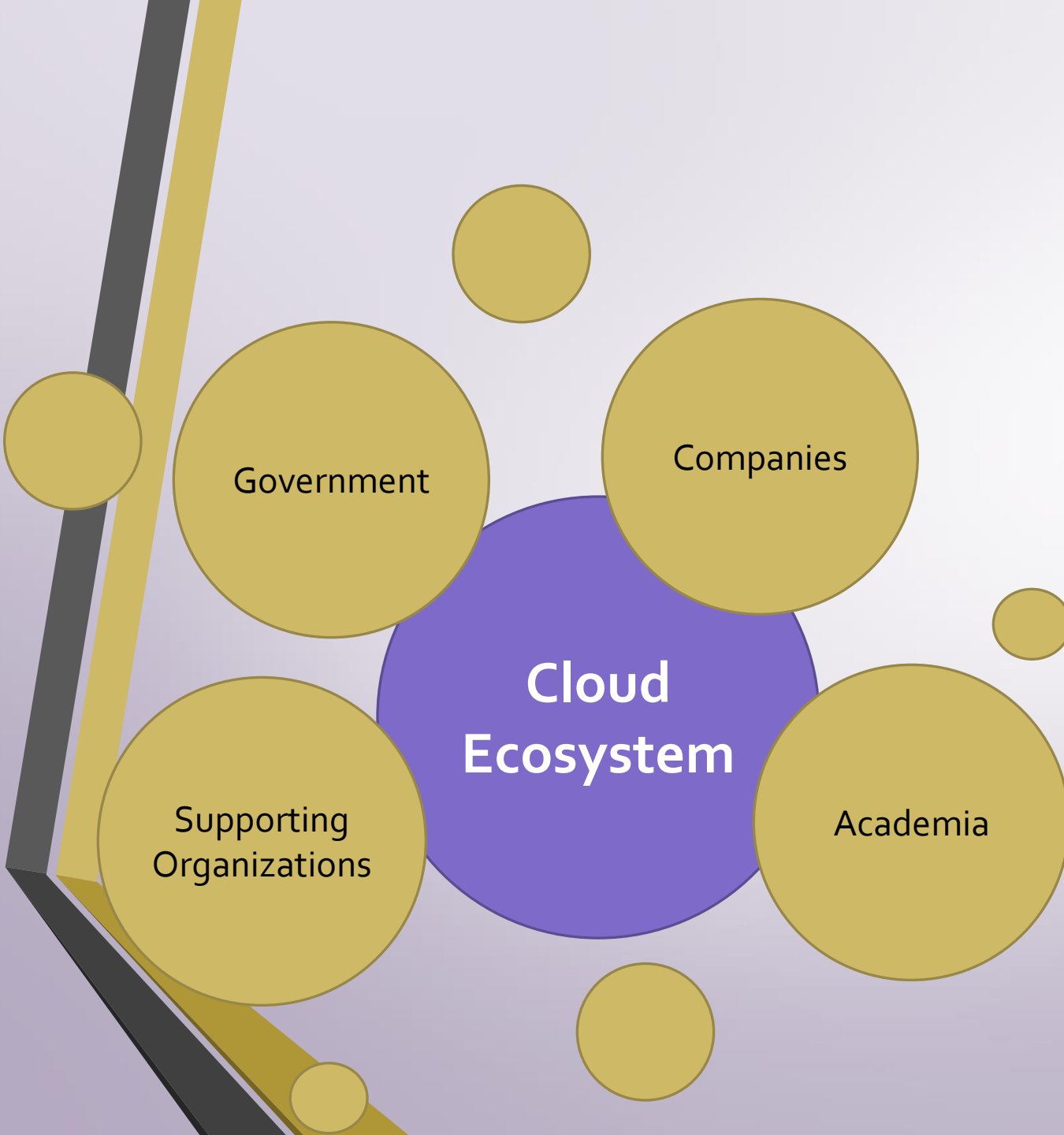
نقش دولت در توسعه اکوسیستم رایانش ابری در ایران

- دولت برای توسعه اکوسیستم رایانش ابری چه کارهایی میتواند انجام دهد؟ چه کارهایی نباید انجام دهد؟

- راه های کمک به دولت در اجرای طرح های مربوطه کدام است و متقابلا دولت چه کمکی میتواند به افراد فعال کند؟

نقش دولت

- **حضور** فعال دولت در فعالیت های جامعه رایانش ابری (با مدل باز)

- تعریف **مسائل** مورد نیاز (**دولت**، دانشگاه، صنعت)

- حمایت از **حل** مسائل مطرح شده در جامعه توسط **دولت**
- (مثال: تامین زیرساخت / ایجاد اعتماد)

Government

Companies

Cloud
Ecosystem

Supporting
Organizations

Academia