

### Results of questionnaire-based survey on the fact-finding survey regarding trade practices of cloud services

(for IaaS CSCs/for PaaS CSCs)

#### <Summary of questionnaire-based survey>

The Japan Fair Trade Commission (JFTC) conducted the questionnaire-based survey targeting CSCs of IaaS, PaaS and SaaS out of cloud services. Its summary is as follows:

Survey target : The JFTC selected 10,000 companies randomly from about 30,000 enterprises that have sales amount of 5 billion yen or more in the latest business year and sent them a request to answer the questionnaire. The JFTC asked the companies that utilize IaaS or PaaS to answer “questionnaire for CSCs of IaaS” or “questionnaire for CSCs of PaaS” of IaaS to answer (in the case they use both IaaS and PaaS, the JFTC asked them to answer the one of higher using ratio.).

Survey method : Web survey

Implementation period : July 19 to August 20, 2021

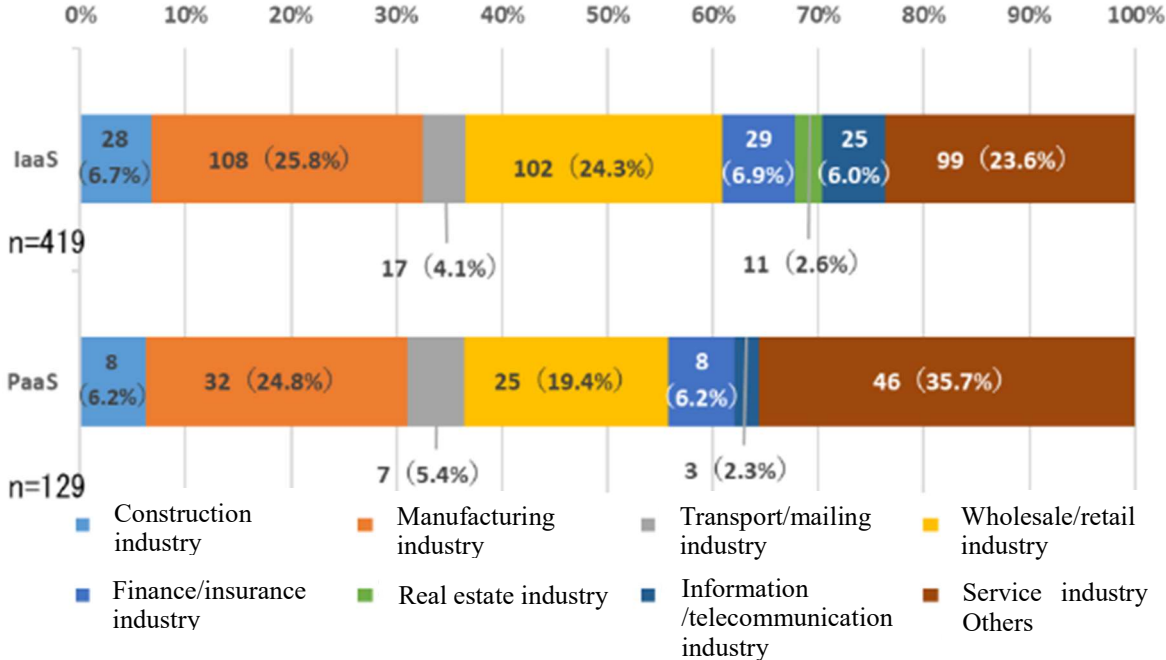
Number of respondents : 419 companies for IaaS CSCs

129 companies for PaaS CSCs

(Points of attention)

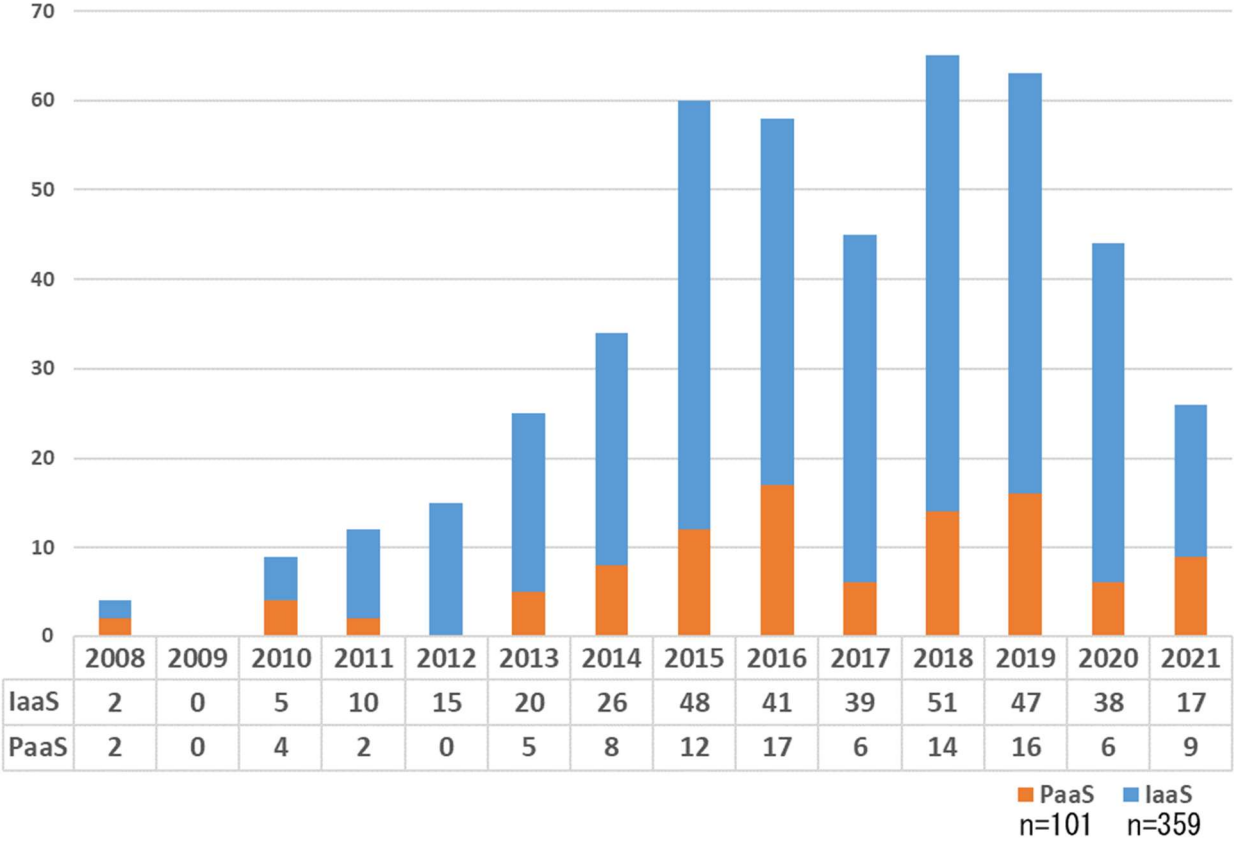
- This documents shall generally describe the survey results on multiple-choice questions among all the questions of the questionnaire.
- In the graphs, “The Three CSPs” shall refer to the responses of the CSCs of the three companies as AWS, Microsoft and Google, and “Others” shall refer to the ones of the CSCs of the business providers other than the said three companies.

Q1. Please answer about your company's overview (type of industry).



Q2. Please fill in the use status of the cloud services (IaaS/PaaS) in your company so far.

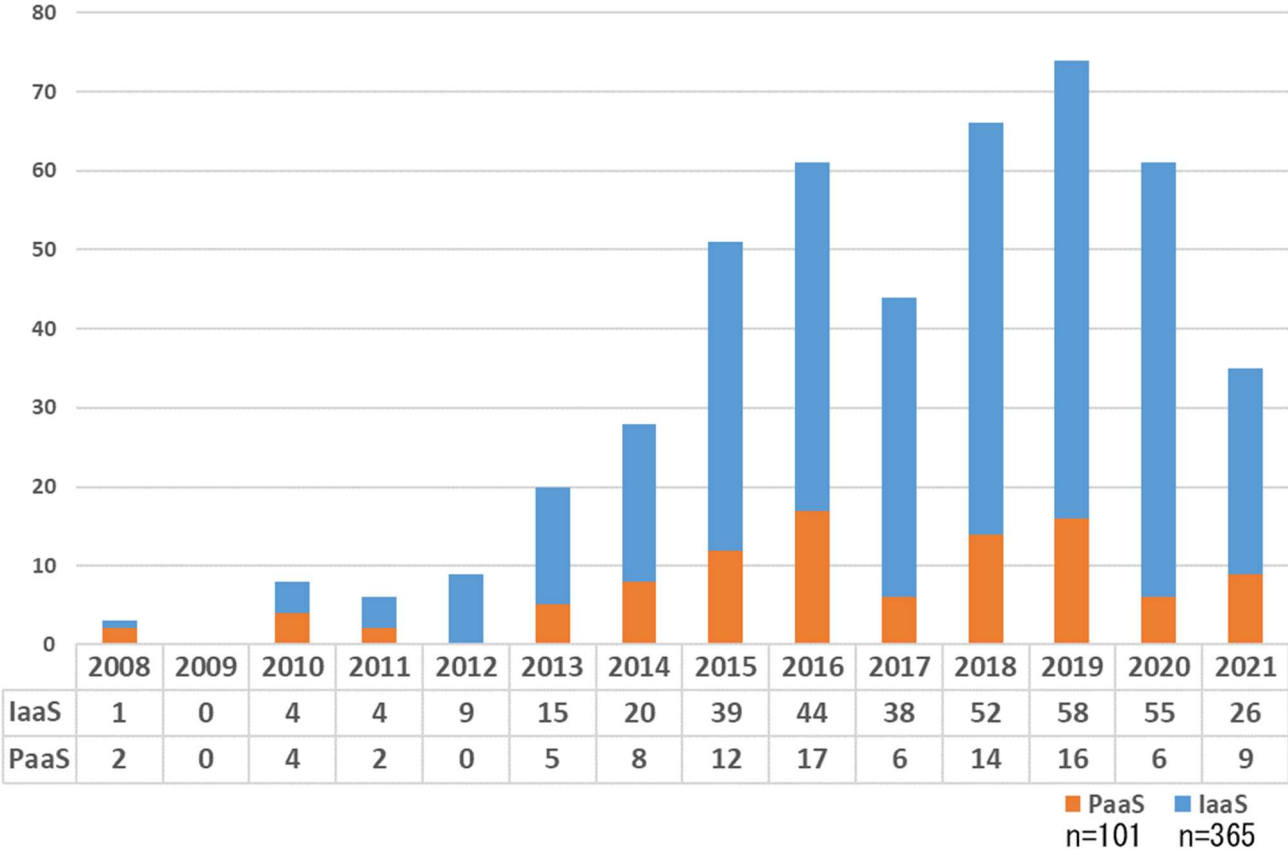
(1) The year you commenced to use IaaS/PaaS no matter which service you currently use, IaaS or PaaS



(Note: with regard to 2021, up to the time of conducting the questionnaire)

Q2. Please fill in the use status of the cloud services (IaaS/PaaS) in your company so far.

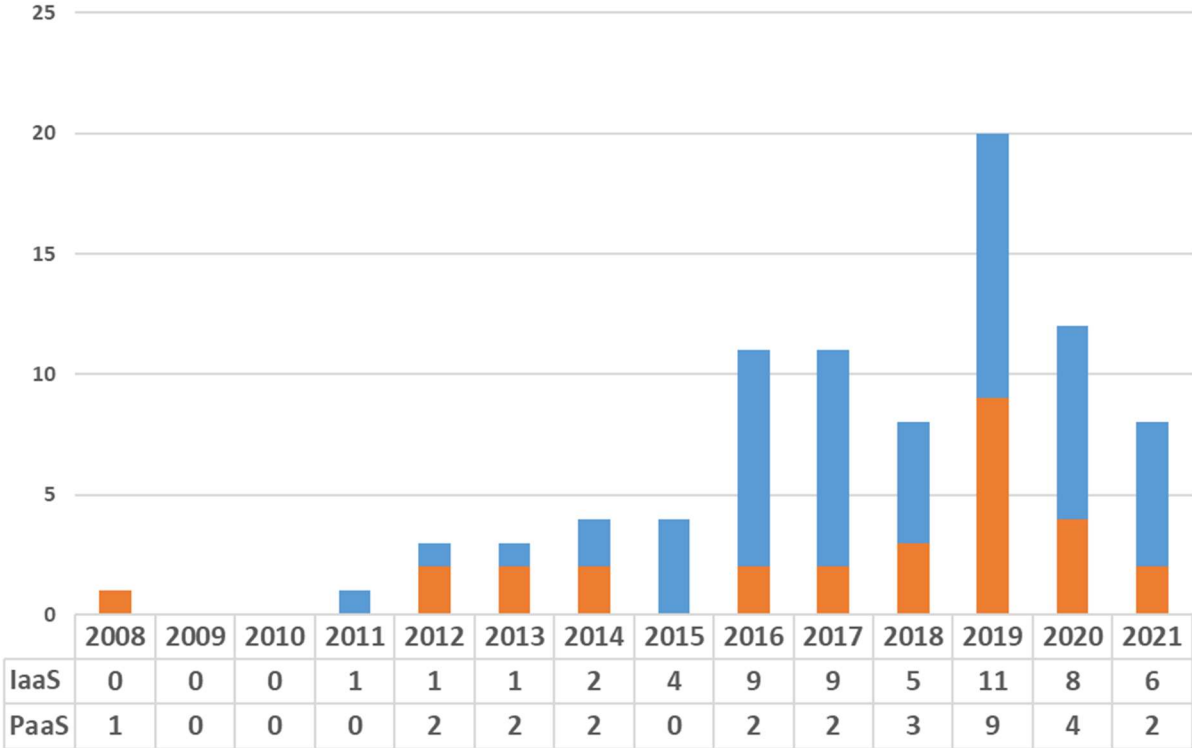
(2) The year you commenced IaaS or PaaS of the highest use amount among the ones of IaaS/PaaS which you currently use



(Note: with regard to 2021, up to the time of conducting the questionnaire)

Q2. Please fill in the use status of the cloud services (IaaS/PaaS) in your company so far.

(3) The year you switched developers /providers of IaaS or PaaS in the past decade

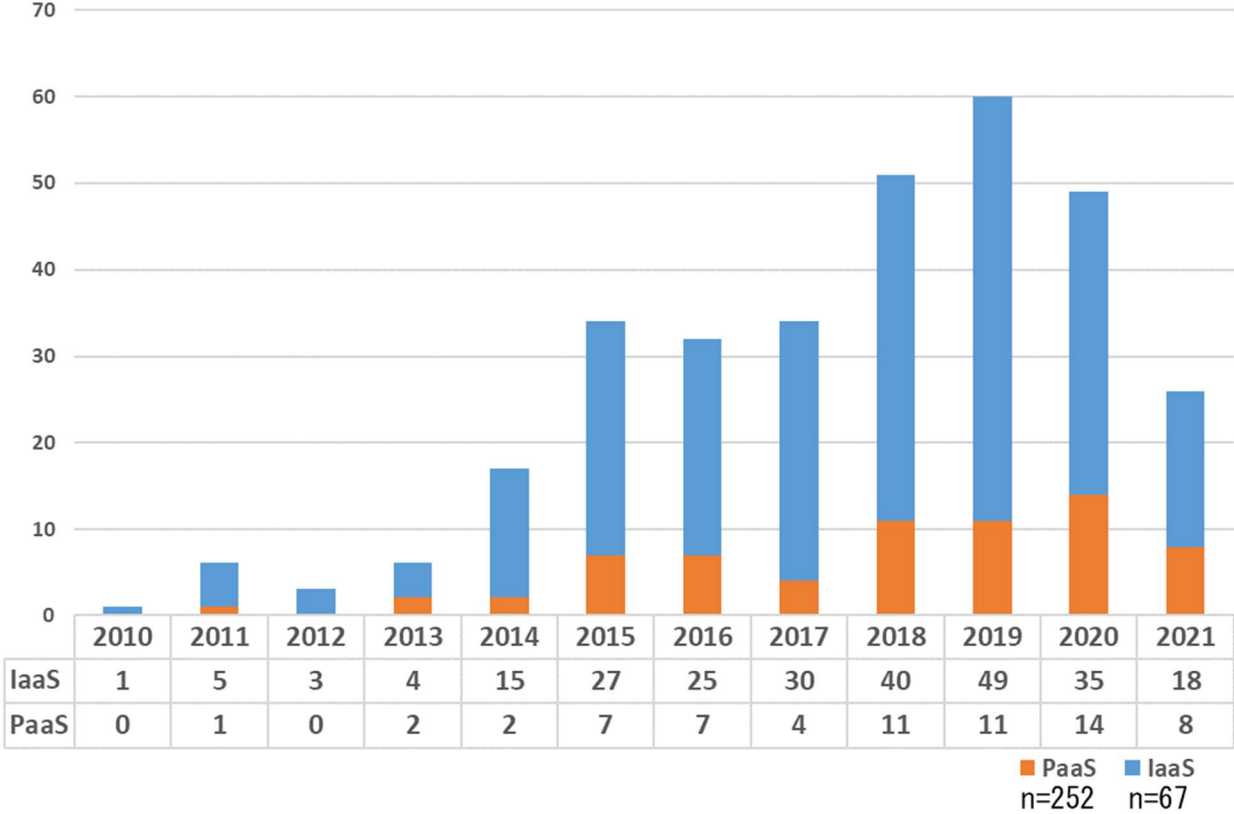


■ PaaS n=29
 ■ IaaS n=57

(Note: with regard to 2021, up to the time of conducting the questionnaire)

Q2. Please fill in the use status of the cloud services (IaaS/PaaS) in your company so far.

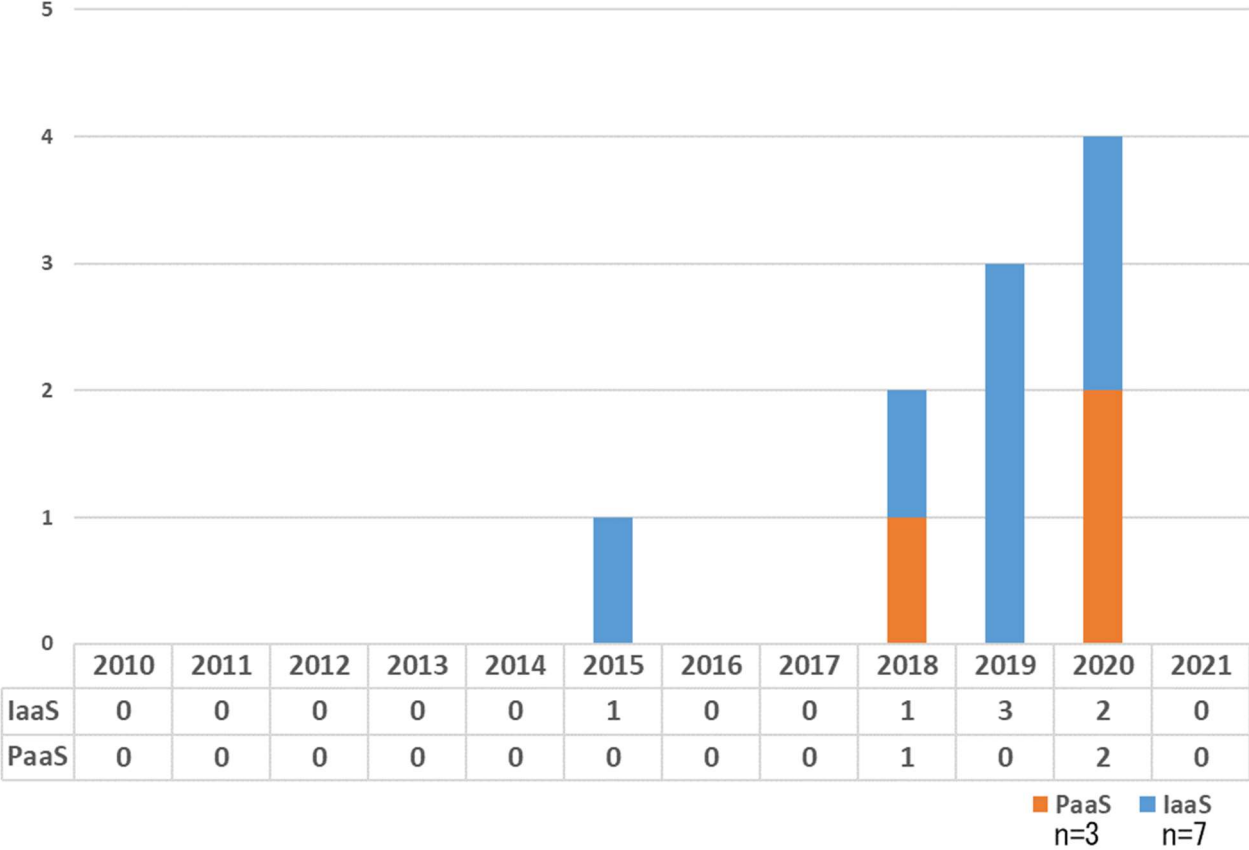
(4) The year you switched from on-premise to IaaS/PaaS in the past decade



(Note: with regard to 2021, up to the time of conducting the questionnaire)

Q2. Please fill in the use status of the cloud services (IaaS/PaaS) in your company so far.

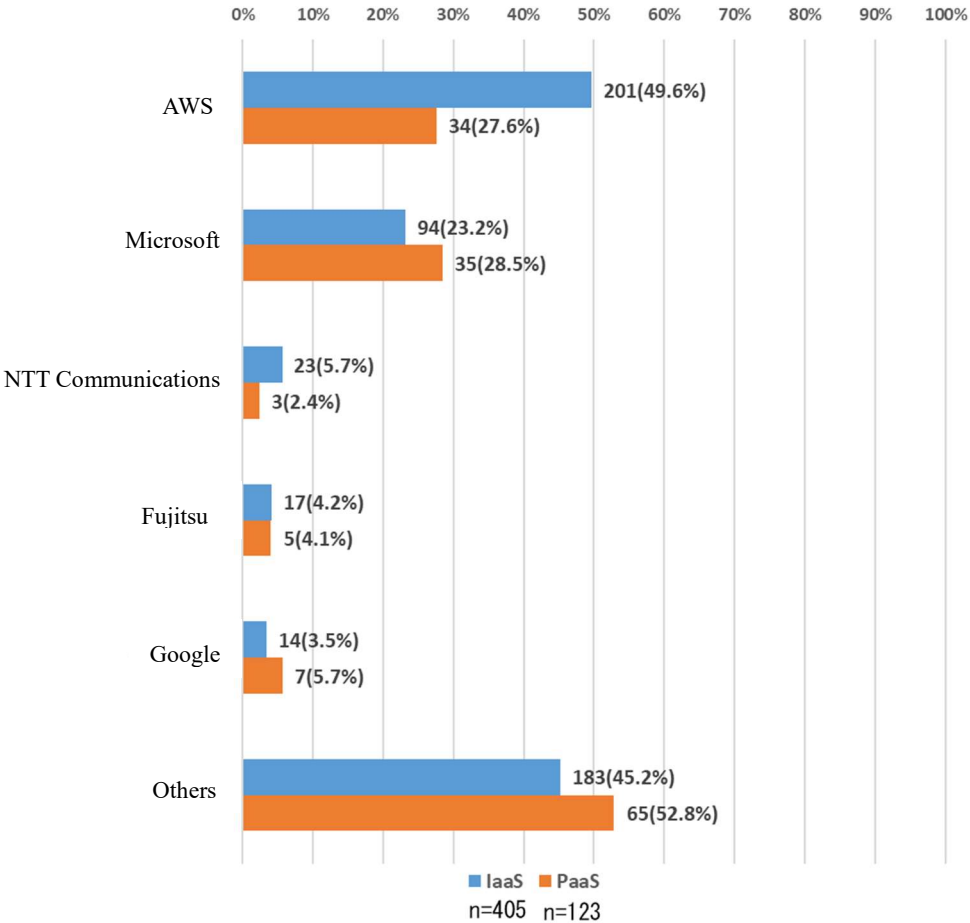
(5) The year you switched from IaaS/PaaS to on-premise in the past decade



(Note: with regard to 2021, up to the time of conducting the questionnaire)

Q3. With regard to the following service developers/providers, please answer if you use IaaS/PaaS or not. In the case where you use, please answer the year you commenced to use/use amount/types of contracts/main purpose of use and data capacity.

(1) Existence/non-existence of use **【Multiple responses allowed】**



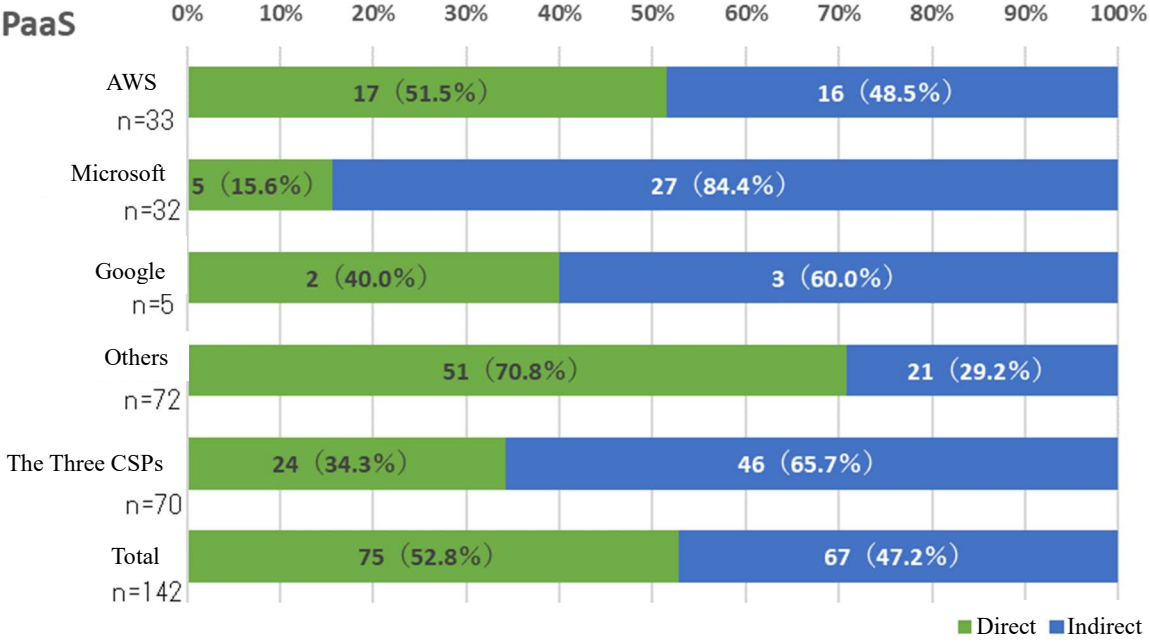
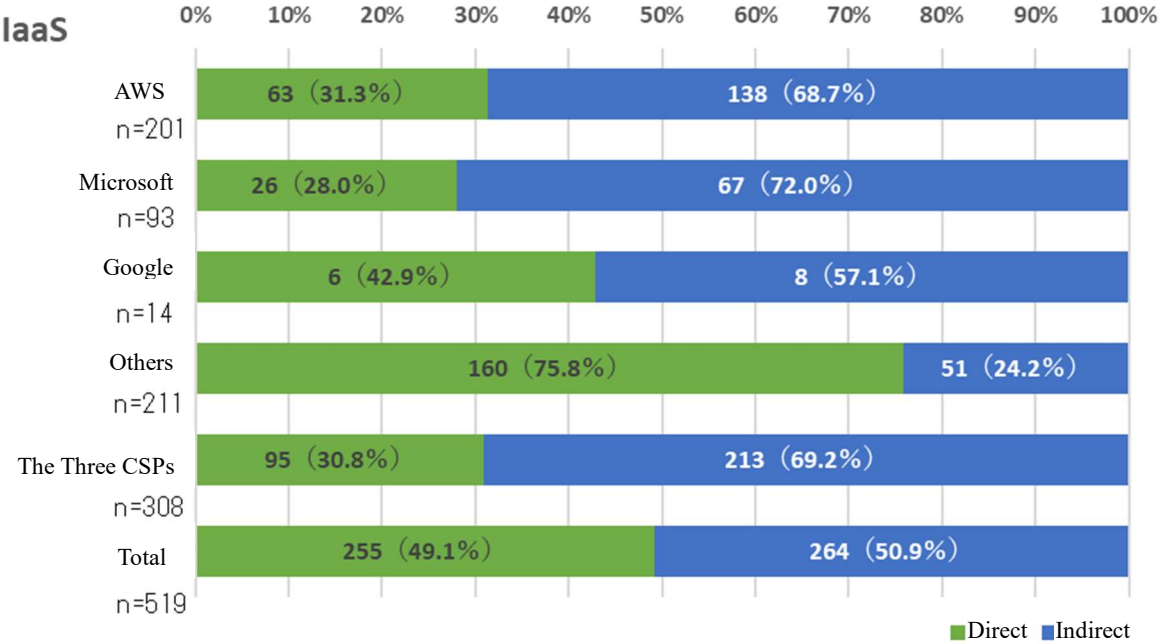
(Reference) Main cloud developers/providers included in “Others”

IaaS		PaaS	
Fujitsu Cloud Technologies	15	Salesforce	4
IIJ	12	IBM	3
NEC	10	NEC	3
IBM	10	IIJ	3
		Sakura Internet	3



Q3. With regard to the following service developers/providers, please answer if you use IaaS/PaaS or not. In the case where you use, please answer the year you commenced to use/use amount/types of contracts/main purpose of use and data capacity.

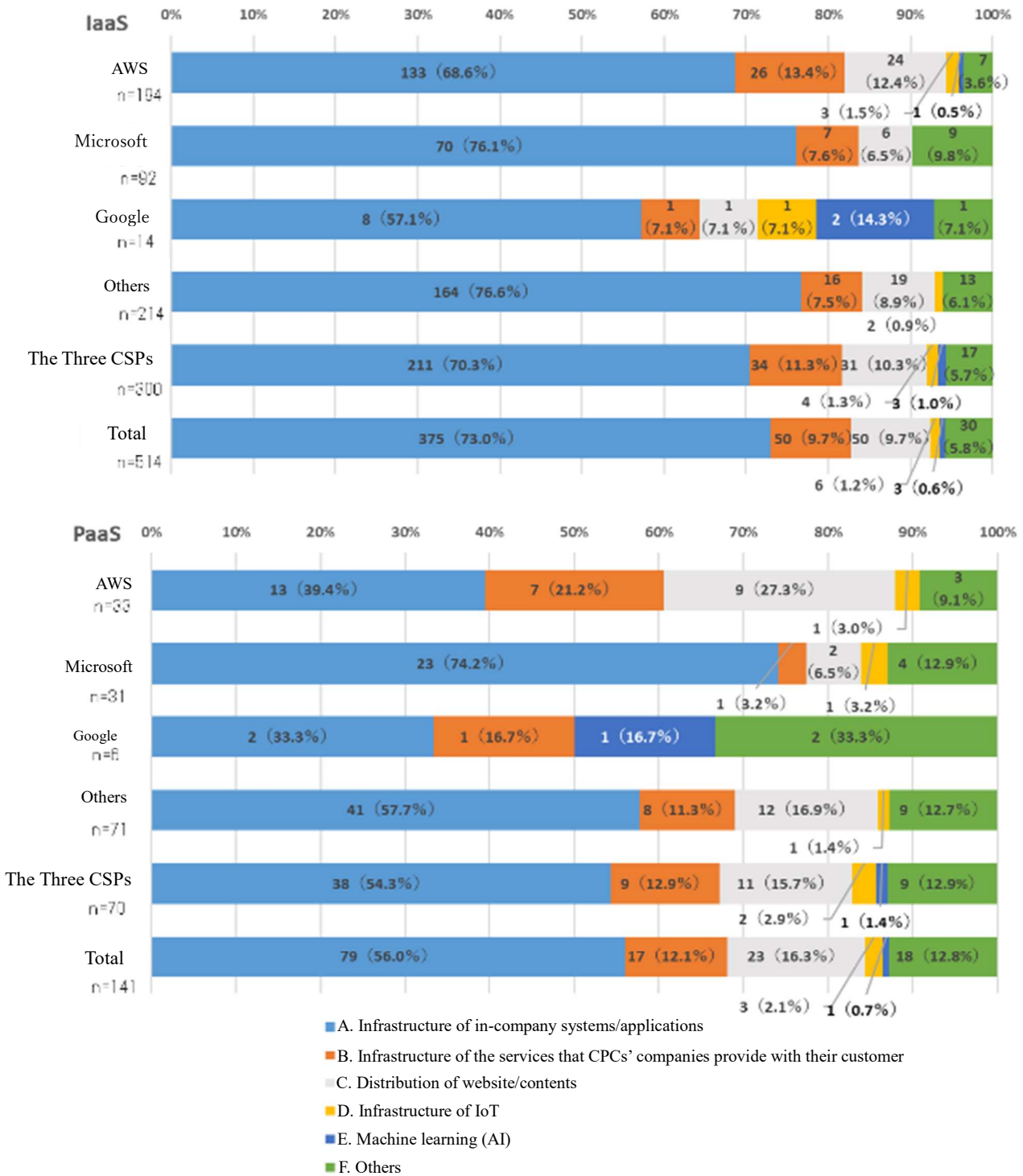
(4)Types of contracts



※ While "direct" refers to the case where CSCs conclude the contracts on use of the said IaaS/PaaS with the said developers/providers themselves (including the cases of applications via the website of each cloud service developer/provider.), "indirect" refers to use introduction support providers such as SIER etc. and agents for the charge of the fees (partners) etc. through the contracts the businesses other than the developers/providers of the said IaaS/PaaS.

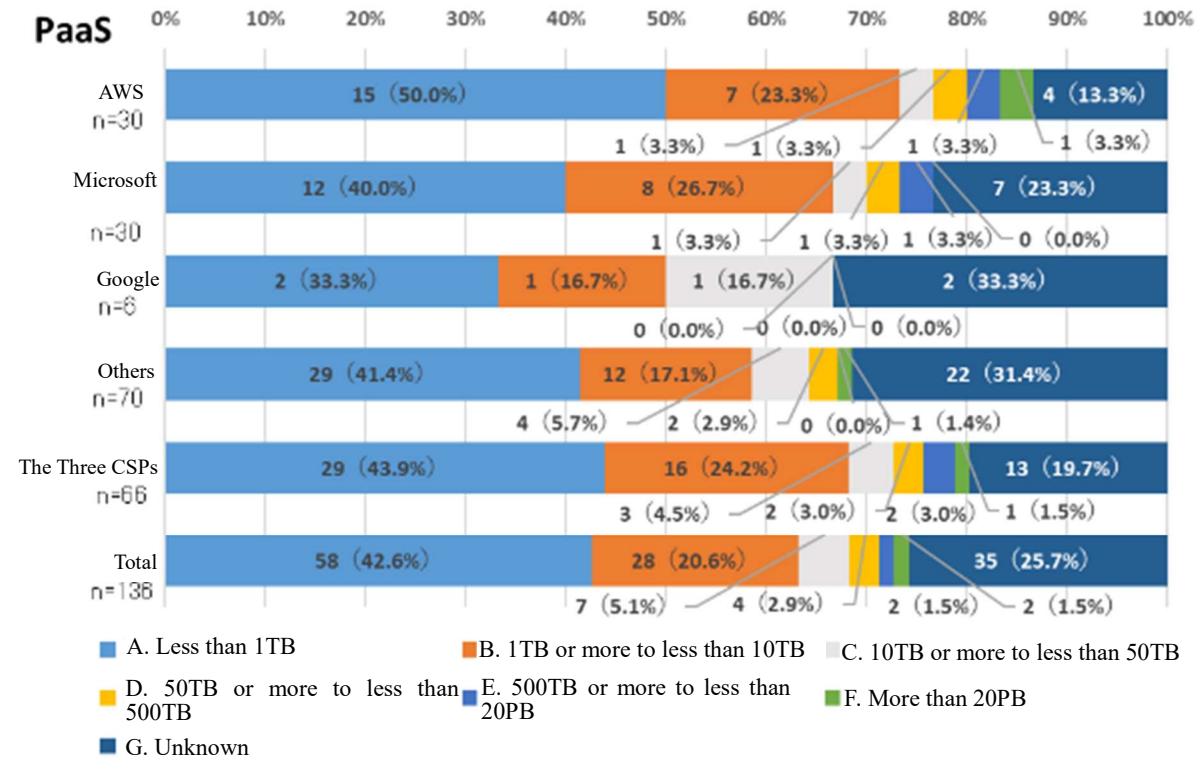
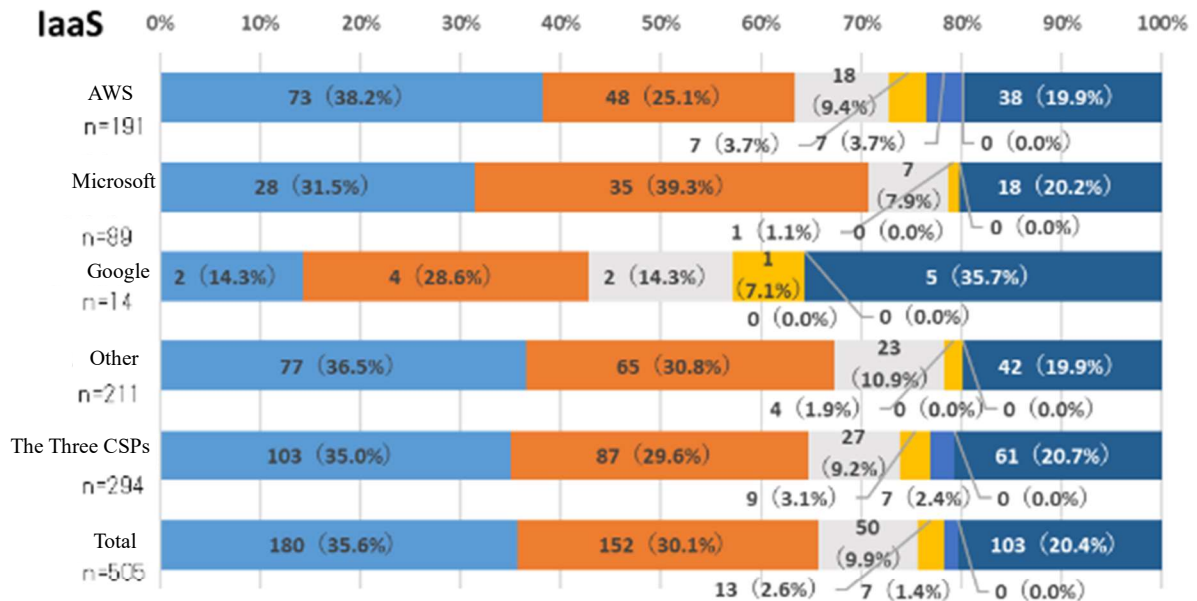
Q3. With regard to the following service developers/providers, please answer if you use IaaS/PaaS or not. In the case where you use, please answer the year you commenced to use/use amount/types of contracts/main purpose of use and data capacity.

(5) Main purpose of use

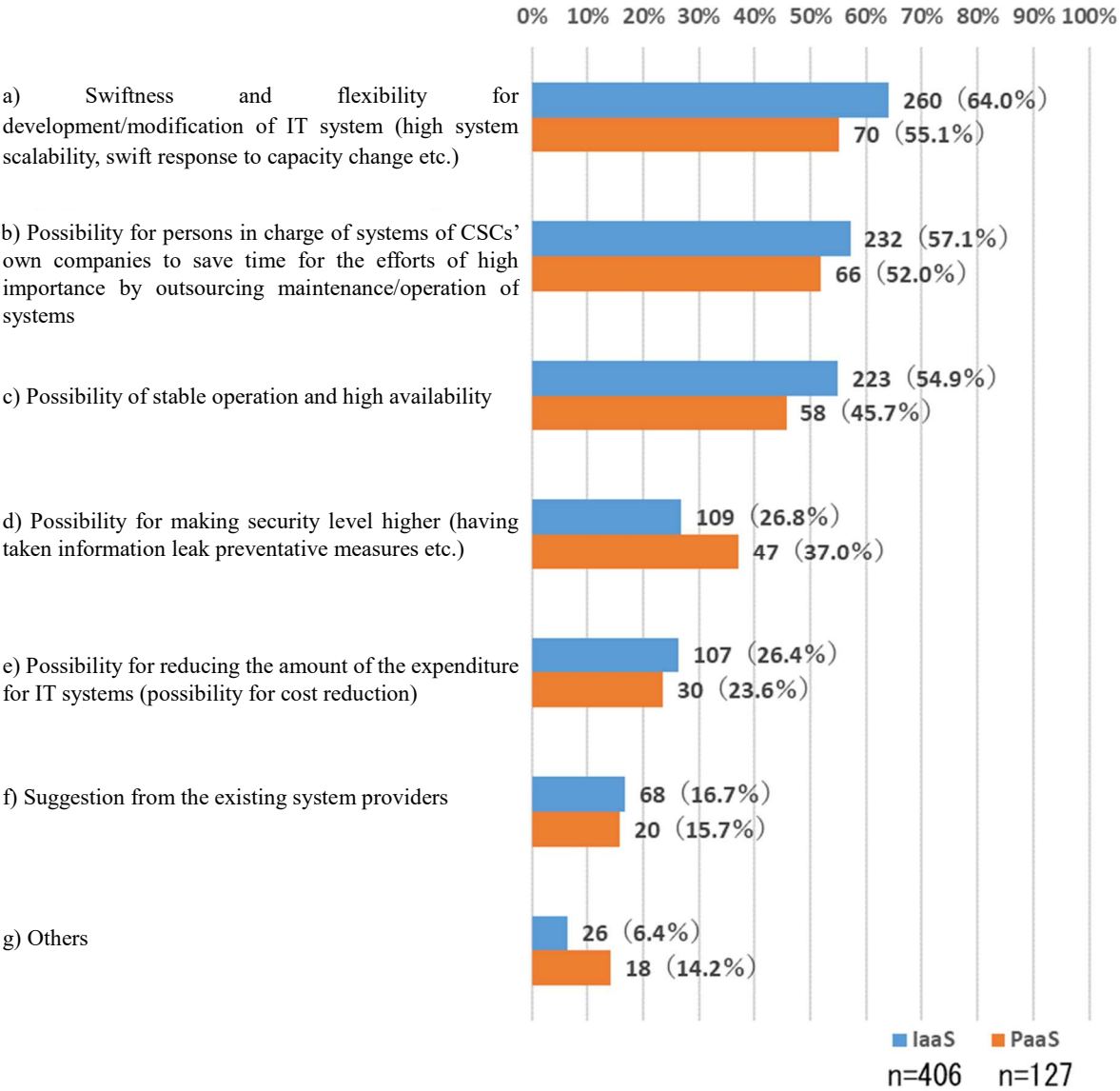


Q3. With regard to the following service developers/providers, please answer if you use IaaS/PaaS or not. In the case where you use, please answer the year you commenced to use/use amount/types of contracts/main purpose of use and data capacity.

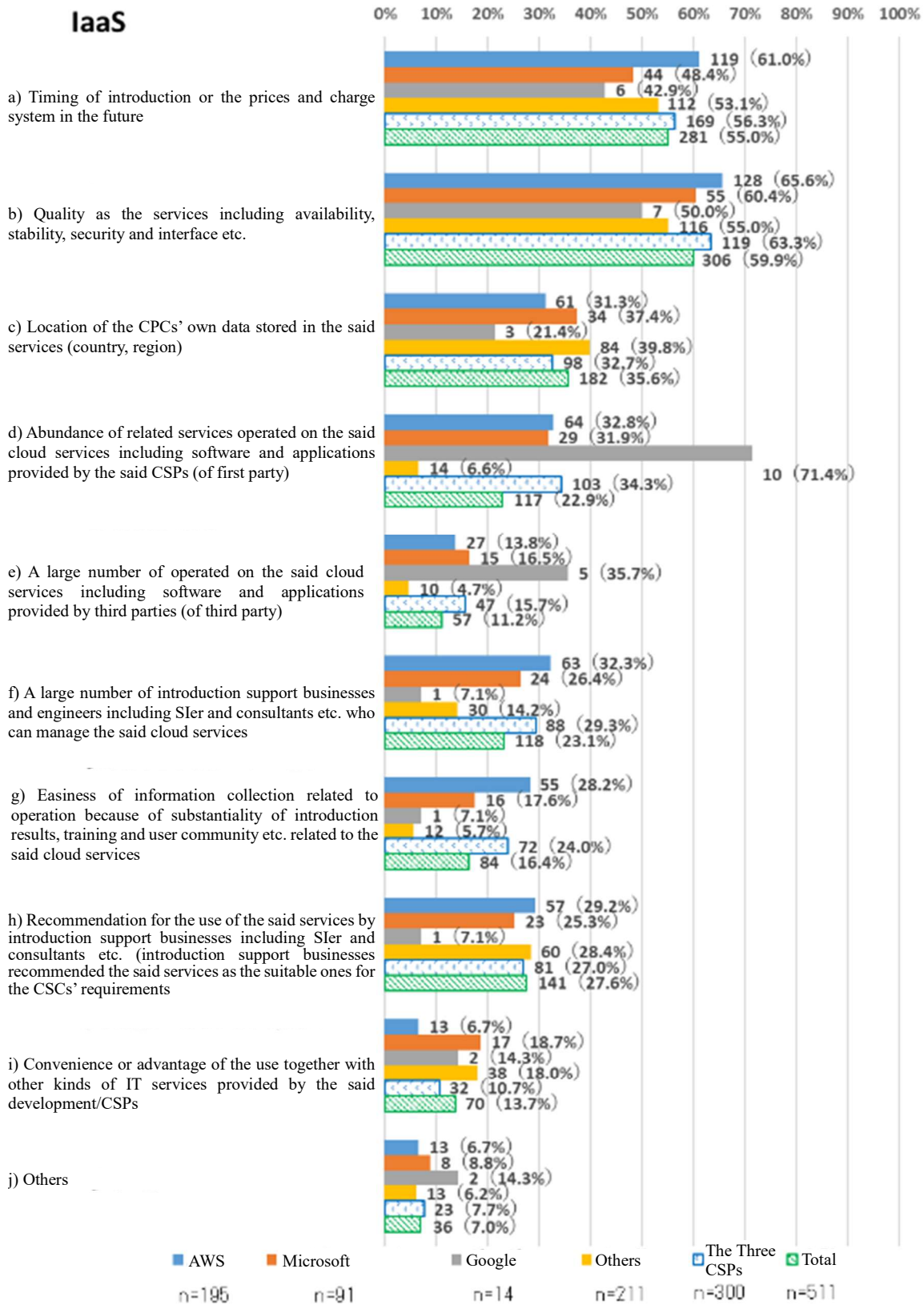
(6) Data capacity



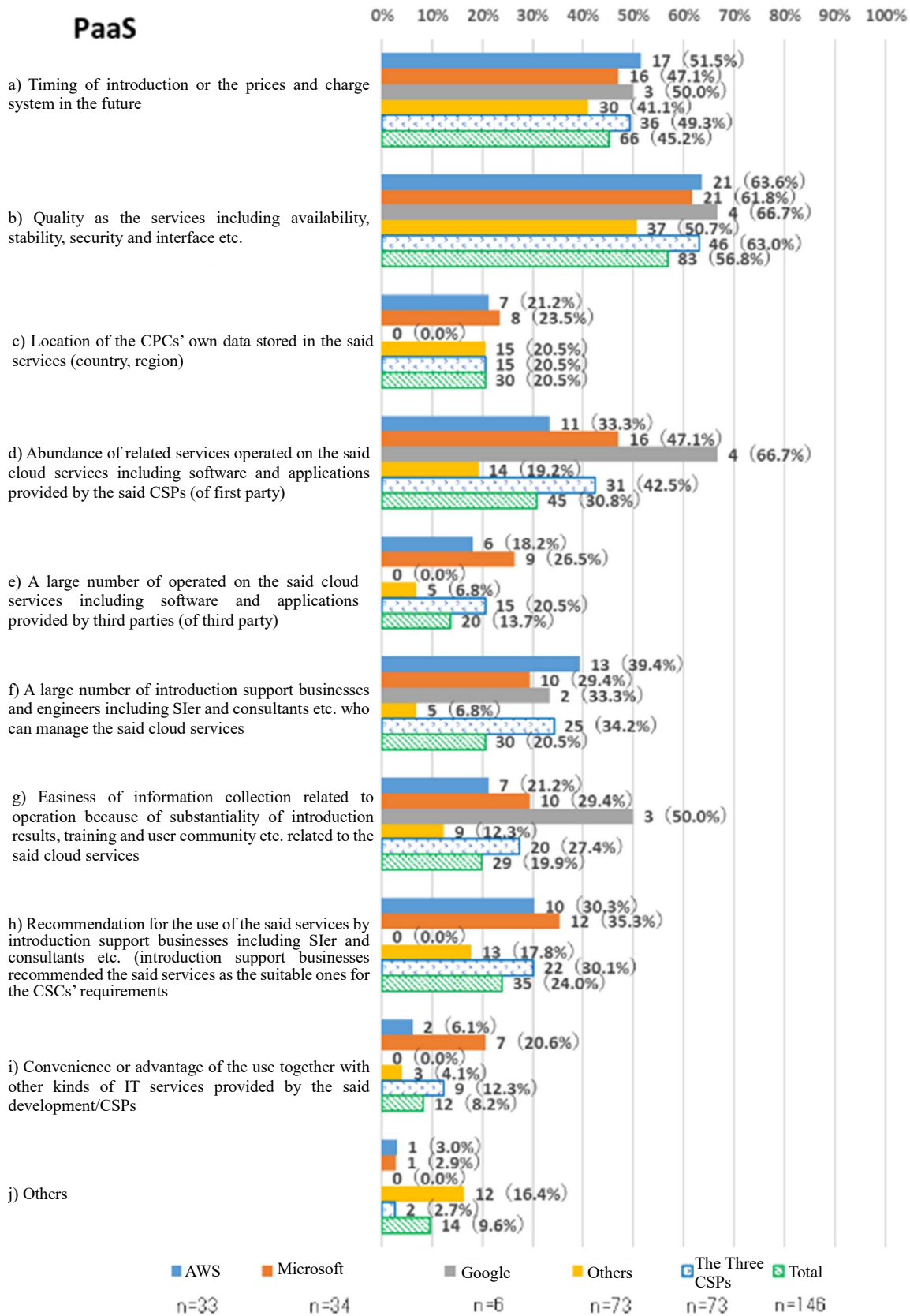
Q5. What is the reason why your company introduced IaaS/PaaS (※as the reason you chose each cloud service developer/provider will be asked in Q6, please answer this question regarding the merits by which you can obtain through introduction of IaaS/PaaS in the first place.) . 【Multiple responses allowed】



Q6. With regard to each cloud service developer/provider answered in Q3, please answer the reason you chose each cloud service of the said business. 【Multiple responses allowed】



# PaaS



IaaS	AWS	Microsoft	Google	Others	The Three CSPs (n=300)	Total (n=511)
	(n=195)	(n=91)	(n=14)	(n=211)		
a) Timing of introduction or the prices and charge system in the future	<b>61.0%</b> (119)	<b>48.4%</b> (44)	<b>42.9%</b> (6)	<b>53.1%</b> (112)	<b>56.3%</b> (169)	<b>55.0%</b> (281)
b) Quality as the services including availability, stability, security and interface etc.	<b>65.6%</b> (128)	<b>60.4%</b> (55)	<b>50.0%</b> (7)	<b>55.0%</b> (116)	<b>63.3%</b> (190)	<b>59.9%</b> (306)
c) Location of the CPCs' own data stored in the said services (country, region)	<b>31.3%</b> (61)	<b>37.4%</b> (34)	<b>21.4%</b> (3)	<b>39.8%</b> (84)	<b>32.7%</b> (98)	<b>35.6%</b> (182)
d) Abundance of related services operated on the said cloud services including software and applications provided by the said CSPs (of first party)	<b>32.8%</b> (64)	<b>31.9%</b> (29)	<b>71.4%</b> (10)	<b>6.6%</b> (14)	<b>34.3%</b> (103)	<b>22.9%</b> (117)
e) A large number of operated on the said cloud services including software and applications provided by third parties (of third party)	<b>13.8%</b> (27)	<b>16.5%</b> (15)	<b>35.7%</b> (5)	<b>4.7%</b> (10)	<b>15.7%</b> (47)	<b>11.2%</b> (57)
f) A large number of introduction support businesses and engineers including Sler and consultants etc. who can manage the said cloud services	<b>32.3%</b> (63)	<b>26.4%</b> (24)	<b>7.1%</b> (1)	<b>14.2%</b> (30)	<b>29.3%</b> (88)	<b>23.1%</b> (118)
g) Easiness of information collection related to operation because of substantiality of introduction results, training and user community etc. related to the said cloud services	<b>28.2%</b> (55)	<b>17.6%</b> (16)	<b>7.1%</b> (1)	<b>5.7%</b> (12)	<b>24.0%</b> (72)	<b>16.4%</b> (84)
h) Recommendation for the use of the said services by introduction support businesses including Sler and consultants etc. (introduction support businesses recommended the said services as the suitable ones for the CSCs' requirements)	<b>29.2%</b> (57)	<b>25.3%</b> (23)	<b>7.1%</b> (1)	<b>28.4%</b> (60)	<b>27.0%</b> (81)	<b>27.6%</b> (141)
i) Convenience or advantage of the use together with other kinds of IT services provided by the said development/CSPs	<b>6.7%</b> (13)	<b>18.7%</b> (17)	<b>14.3%</b> (2)	<b>18.0%</b> (38)	<b>10.7%</b> (32)	<b>13.7%</b> (70)
J) Others	<b>6.7%</b> (13)	<b>8.8%</b> (8)	<b>14.3%</b> (2)	<b>6.2%</b> (13)	<b>7.7%</b> (23)	<b>7.0%</b> (36)

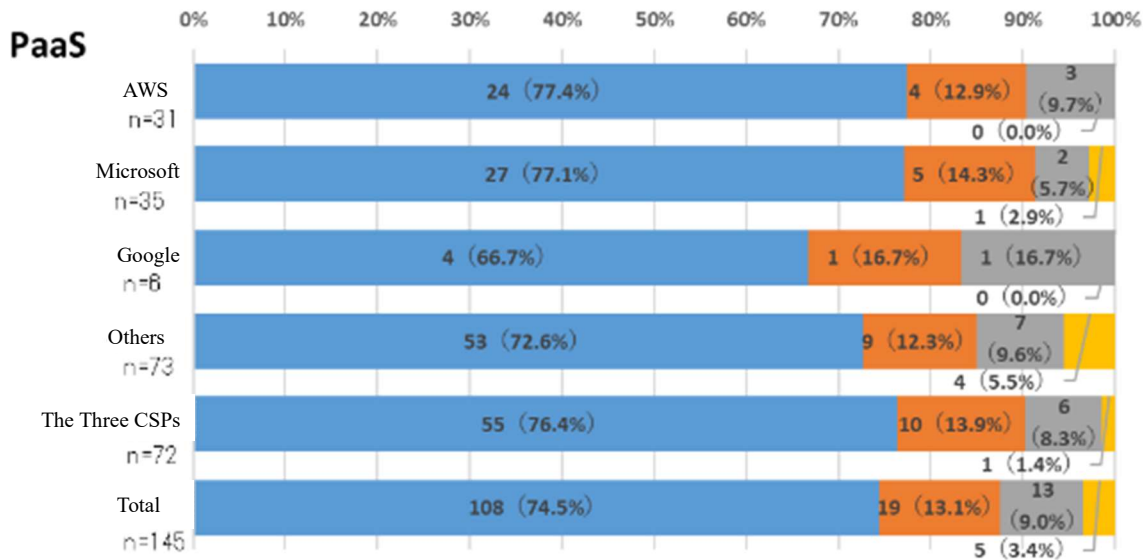
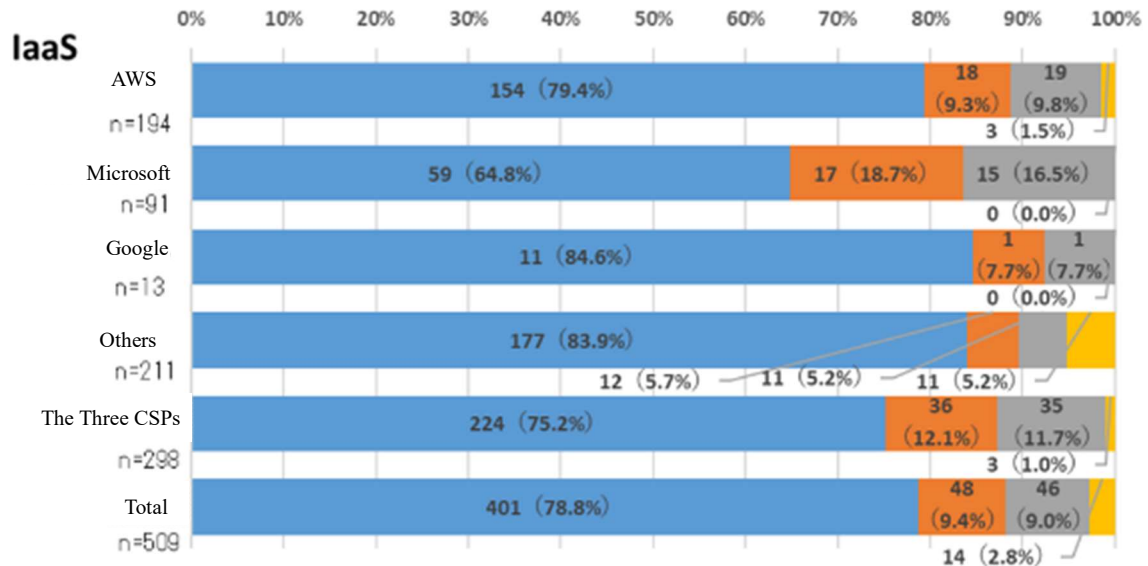
※ In the graph, the red cell shows the proportion of 50% or more of the respondents and the yellow one as 30% or more to less than 50%.

PaaS	AWS	Microsoft	Google	Others	The Three CSPs	Total
	(n=33)	(n=34)	(n=6)	(n=73)		
a) Timing of introduction or the prices and charge system in the future	<b>51.5%</b> (17)	<b>47.1%</b> (16)	<b>50.0%</b> (3)	<b>41.1%</b> (30)	<b>49.3%</b> (36)	<b>45.2%</b> (66)
b) Quality as the services including availability, stability, security and interface etc.	<b>63.6%</b> (21)	<b>61.8%</b> (21)	<b>66.7%</b> (4)	<b>50.7%</b> (37)	<b>63.0%</b> (46)	<b>56.8%</b> (83)
c) Location of the CPCs' own data stored in the said services (country, region)	<b>21.2%</b> (7)	<b>23.5%</b> (8)	<b>0.0%</b> (0)	<b>20.5%</b> (15)	<b>20.5%</b> (15)	<b>20.5%</b> (30)
d) Abundance of related services operated on the said cloud services including software and applications provided by the said CSPs (of first party)	<b>33.3%</b> (11)	<b>47.1%</b> (16)	<b>66.7%</b> (4)	<b>19.2%</b> (14)	<b>42.5%</b> (31)	<b>30.8%</b> (45)
e) A large number of operated on the said cloud services including software and applications provided by third parties (of third party)	<b>18.2%</b> (6)	<b>26.5%</b> (9)	<b>0.0%</b> (0)	<b>6.8%</b> (5)	<b>20.5%</b> (15)	<b>13.7%</b> (20)
f) A large number of introduction support businesses and engineers including Sler and consultants etc. who can manage the said cloud services	<b>39.4%</b> (13)	<b>29.4%</b> (10)	<b>33.3%</b> (2)	<b>6.8%</b> (5)	<b>34.2%</b> (25)	<b>20.5%</b> (30)
g) Easiness of information collection related to operation because of substantiality of introduction results, training and user community etc. related to the said cloud services	<b>21.2%</b> (7)	<b>29.4%</b> (10)	<b>50.0%</b> (3)	<b>12.3%</b> (9)	<b>27.4%</b> (20)	<b>19.9%</b> (29)
h) Recommendation for the use of the said services by introduction support businesses including Sler and consultants etc. (introduction support businesses recommended the said services as the suitable ones for the CSCs' requirements)	<b>30.3%</b> (10)	<b>35.3%</b> (12)	<b>0.0%</b> (0)	<b>17.8%</b> (13)	<b>30.1%</b> (22)	<b>24.0%</b> (35)
i) Convenience or advantage of the use together with other kinds of IT services provided by the said development/CSPs	<b>6.1%</b> (2)	<b>20.6%</b> (7)	<b>0.0%</b> (0)	<b>4.1%</b> (3)	<b>12.3%</b> (9)	<b>8.2%</b> (12)
j) Others	<b>3.0%</b> (1)	<b>2.9%</b> (1)	<b>0.0%</b> (0)	<b>16.4%</b> (12)	<b>2.7%</b> (2)	<b>9.6%</b> (14)

※ In the graph, the red cell shows the proportion of 50% or more of the respondents and the yellow one as 30% or more to less than 50%.



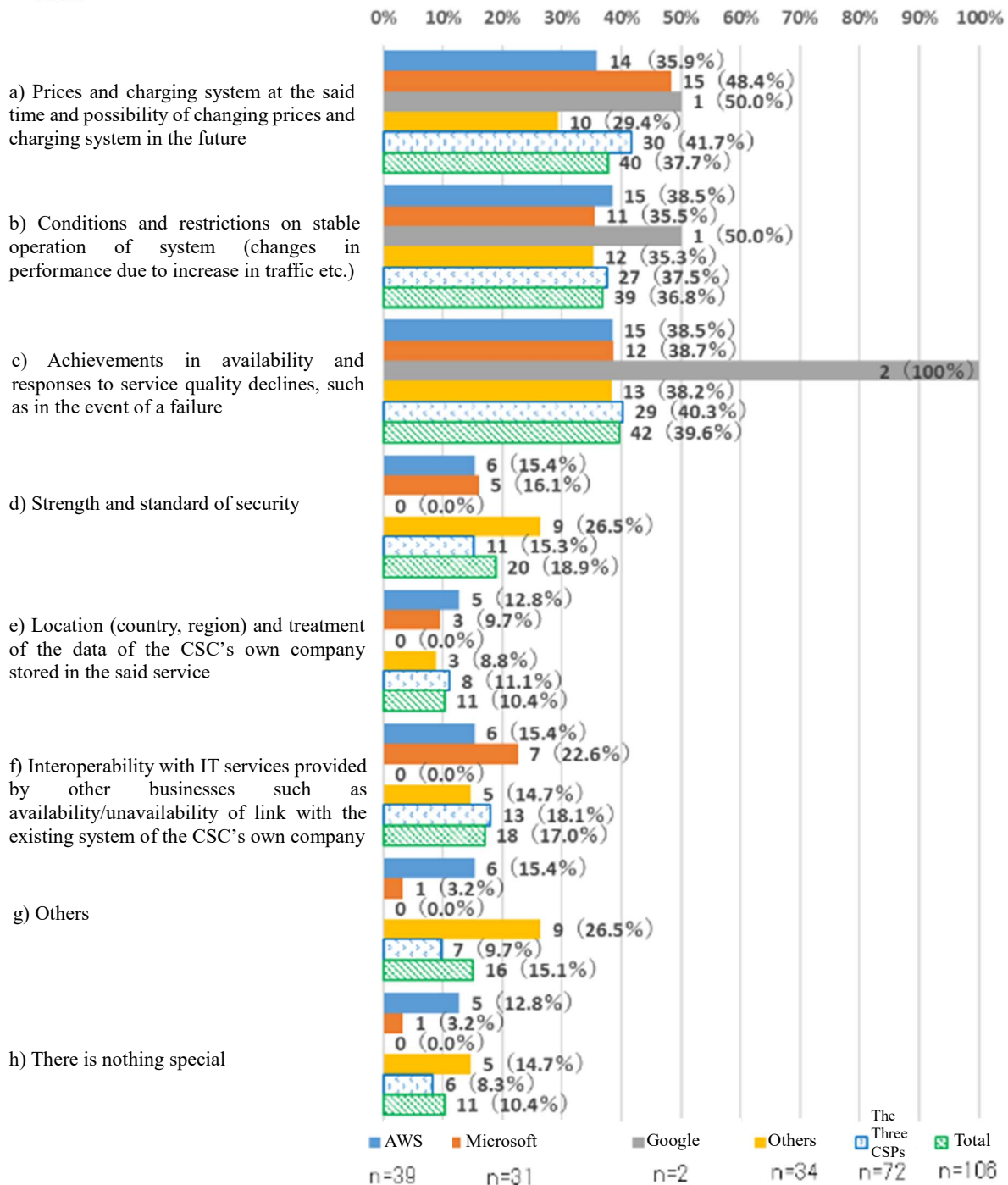
Q7. With regard to the cloud services you answered in Q3 at the time of considering introduction, is there anything that you wished to know more or thought you should have asked at the time of service selection in the information provided by the developers/providers (prices, stability and availability, security, location of data and the information on the realizable range by the said service)?



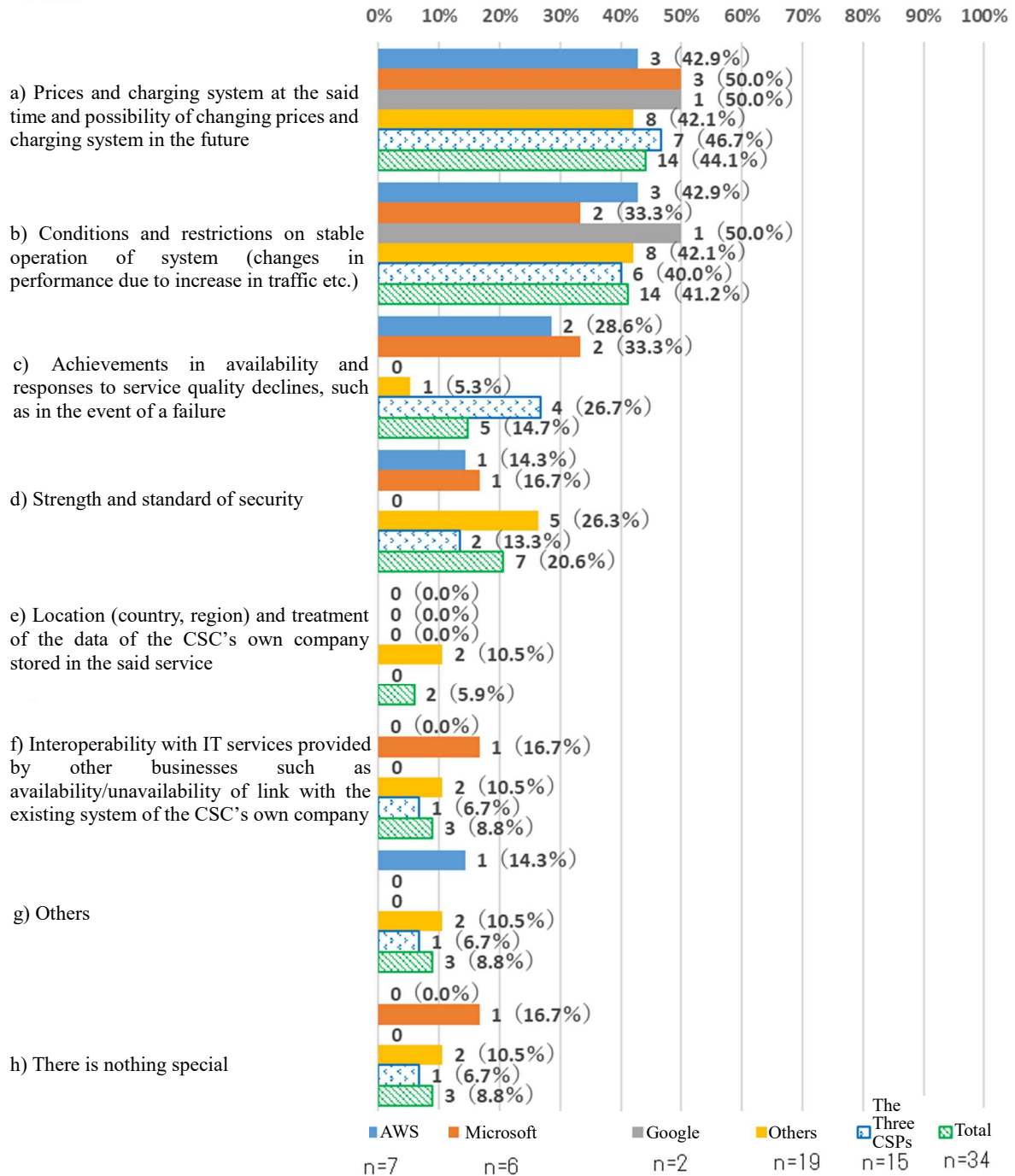
- a) All necessary information was available at the time of service selection and there was no problem
- b) Some of the information obtained at the time of service selection was not sufficient, and it was necessary to purchase additional services or change to a higher level of service after implementation
- c) As the information obtained during service selection was not sufficient, there is some concern about the use of the service, although no special measure is currently taken
- d) Others

Q8. With regard to the CSPs who answered other than a) in Q7, what is the matter that you think insufficient as the information obtained from service developers/providers at the time of service selection (in case of choosing the item other than a) in Q7)? **【Multiple responses allowed】**

IaaS

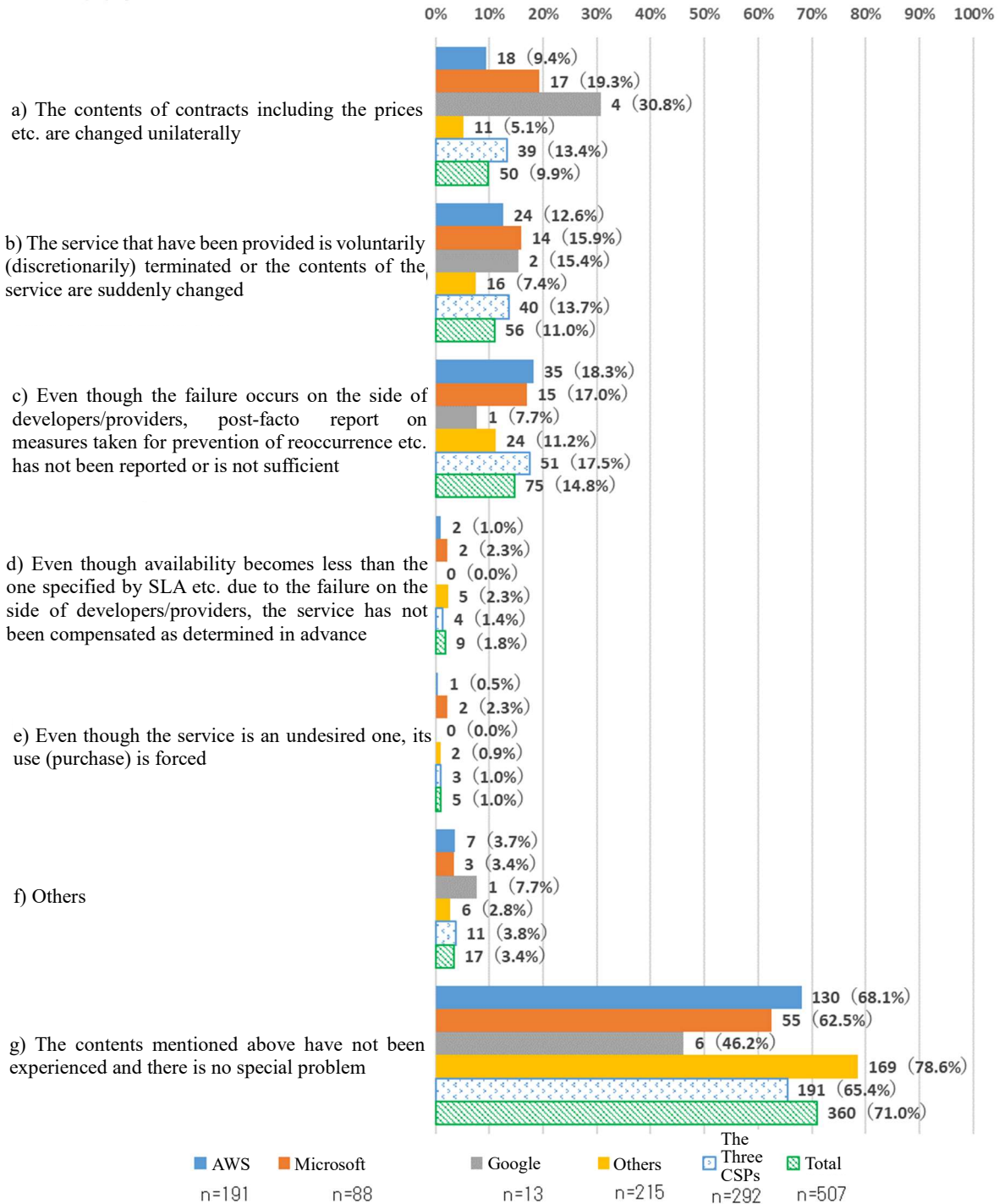


## PaaS

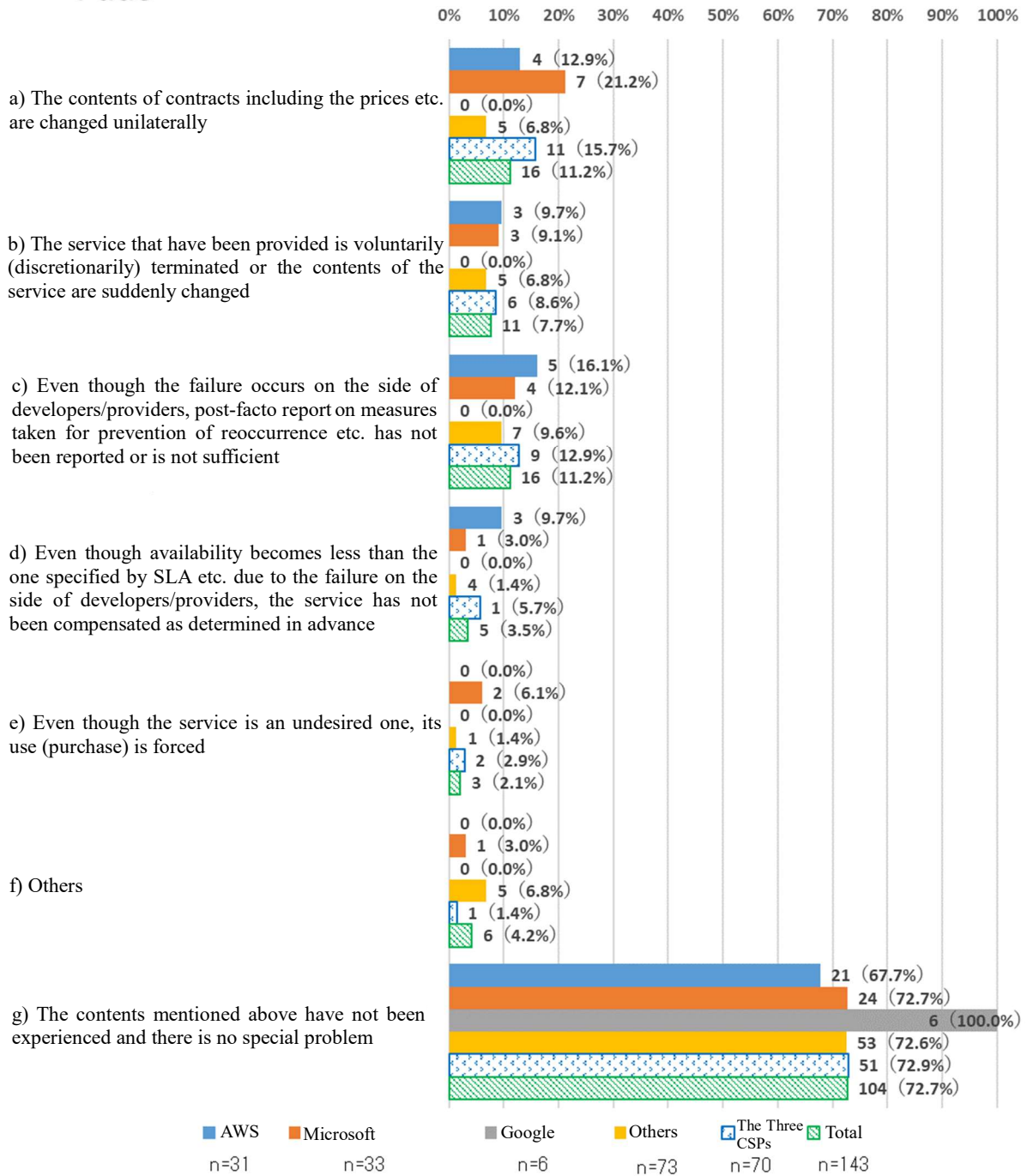


Q9. With regard to provision of IaaS/PaaS by cloud service developers/providers answered in Q3, do you have the following problems or complaints? (excluding the problems or complaints such as discrepancies in information asked in Q7 and A8.) 【Multiple responses allowed】

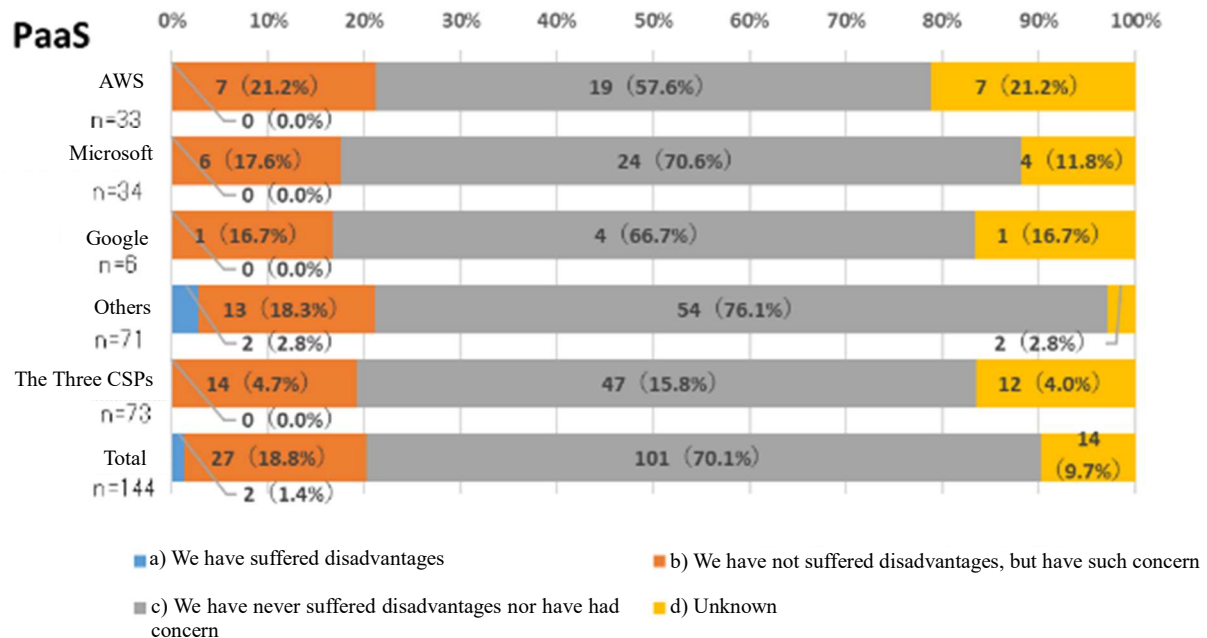
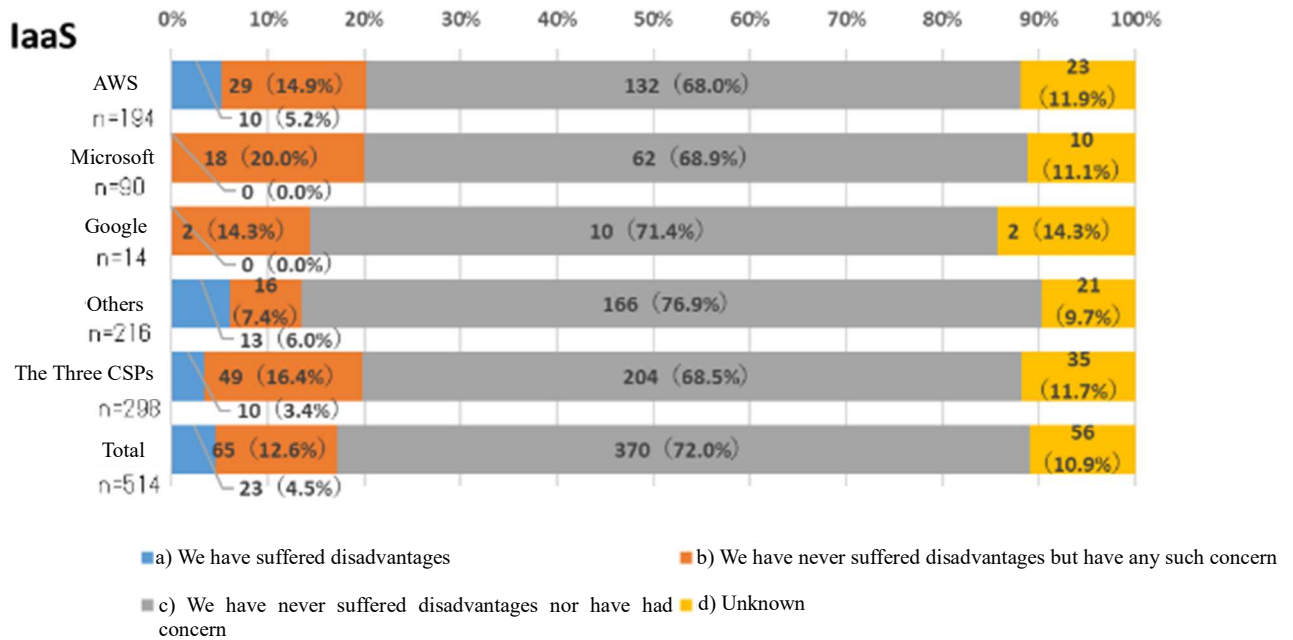
## IaaS



# PaaS

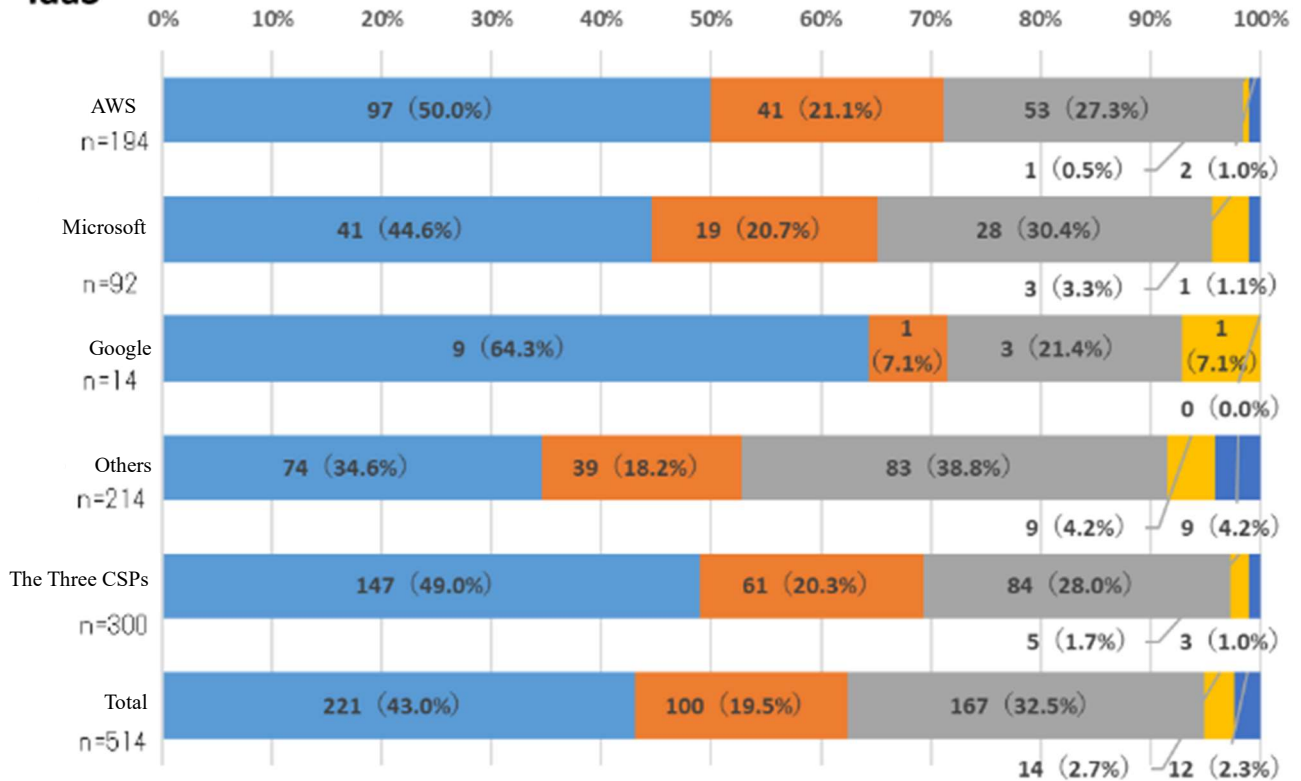


Q10. Have you ever had any concern about the data management for your company by cloud service developers/providers answered in Q3 or actually suffered any disadvantage?



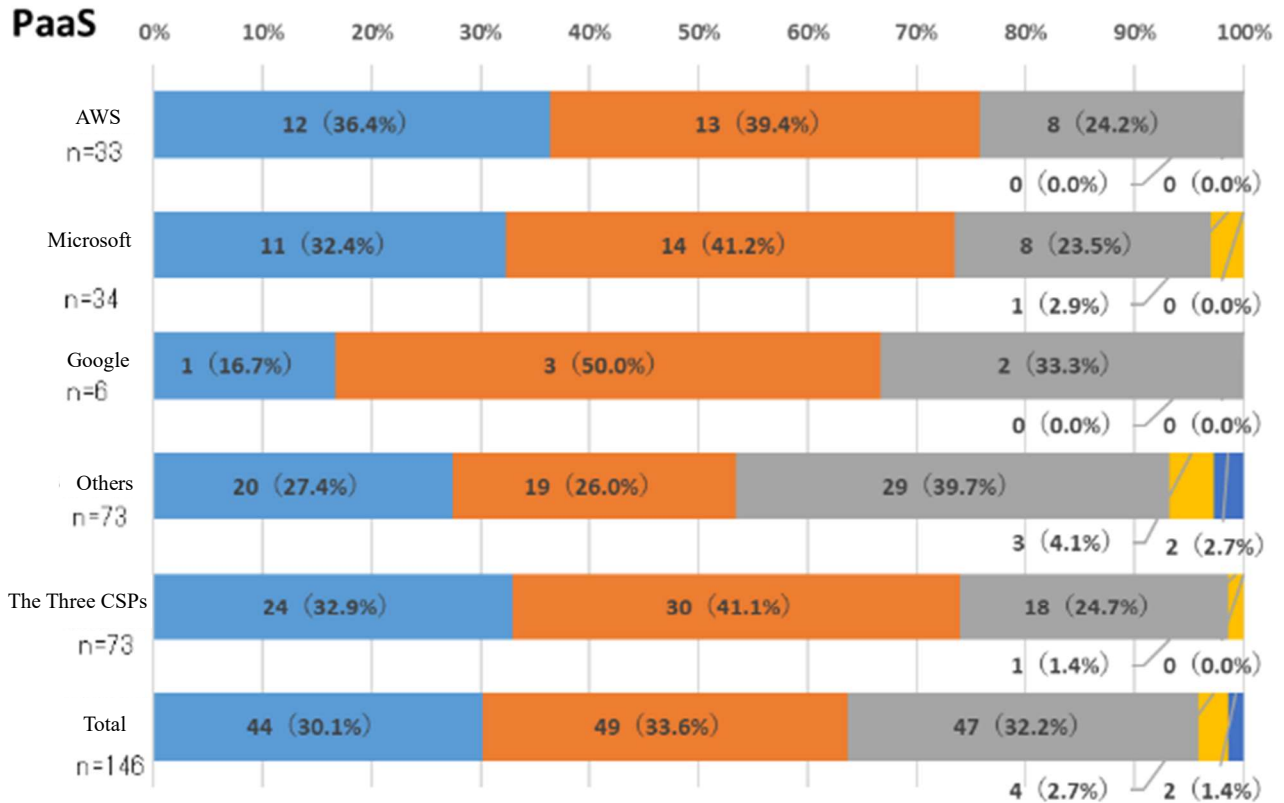
Q11. If your company considers increase in the use of cloud services in the future, do you consider introduction of the services of developer/provider of IaaS/PaaS (you currently use) that you answered in Q3? Or do you decide the services by comparing the said service with the one of other cloud service developers/providers from scratch?

### IaaS



- a) In principle, we consider the service of developer/provider of IaaS/PaaS that we currently use with priority
- b) We would rather consider the service of developer/provider of IaaS/PaaS that we currently use with priority
- c) We consider to newly introduce a service in light of business characteristics and functions/quality of service, whether we have already used the service of a particular cloud service developer/provider or not
- d) We would rather consider the services of other cloud service developer/provider with priority
- e) In principle, we consider the services of other cloud service developer/provider with priority

## PaaS

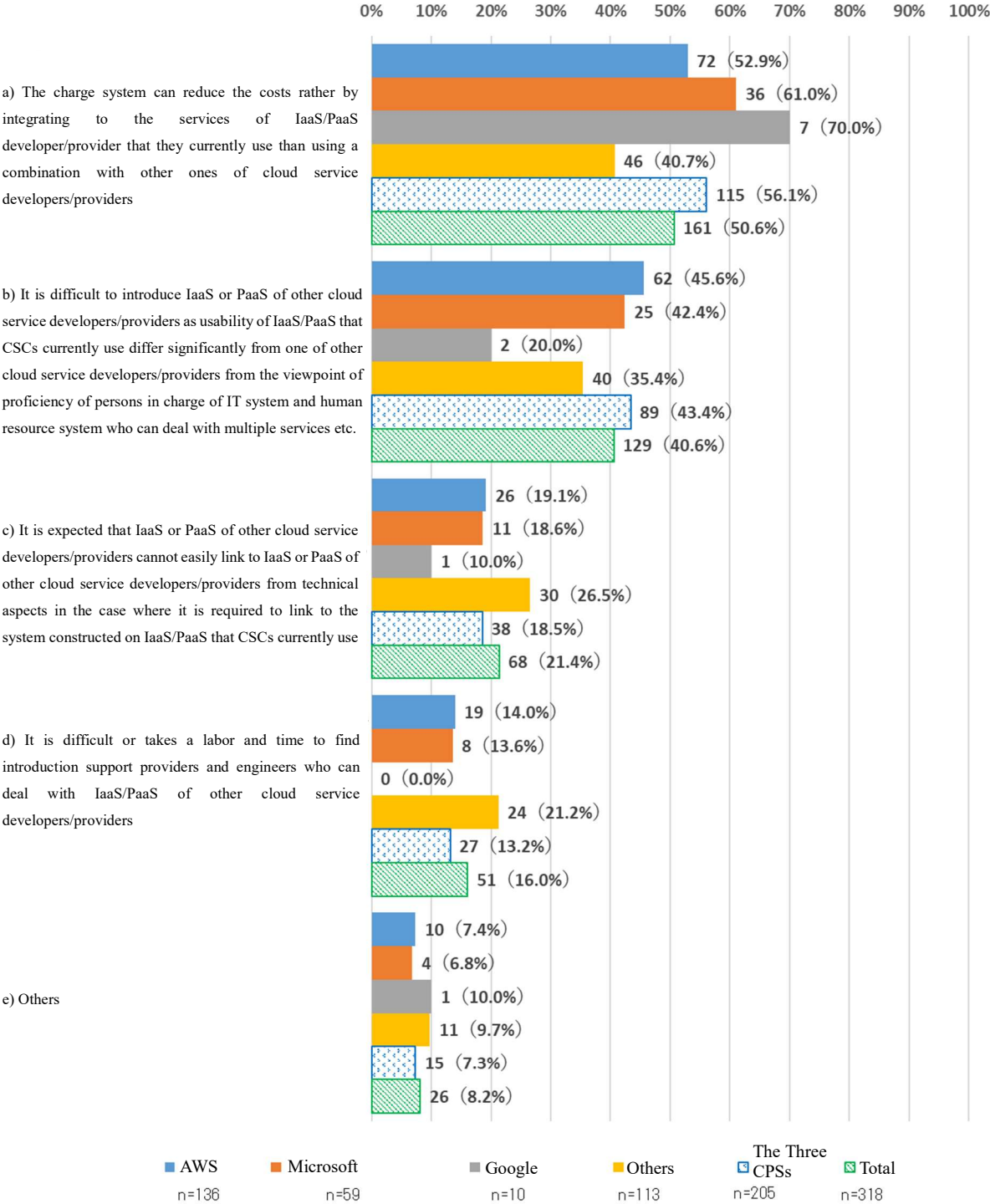


- a) In principle, we consider the service of developer/provider of IaaS/PaaS that we currently use with priority
- b) We would rather consider the service of developer/provider of IaaS/PaaS that we currently use with priority
- c) We consider to newly introduce a service in light of business characteristics and functions/quality of service, whether we have already used the service of a particular cloud service developer/provider or not
- d) We would rather consider the services of other cloud service developer/provider with priority
- e) In principle, we consider the services of other cloud service developer/provider with priority

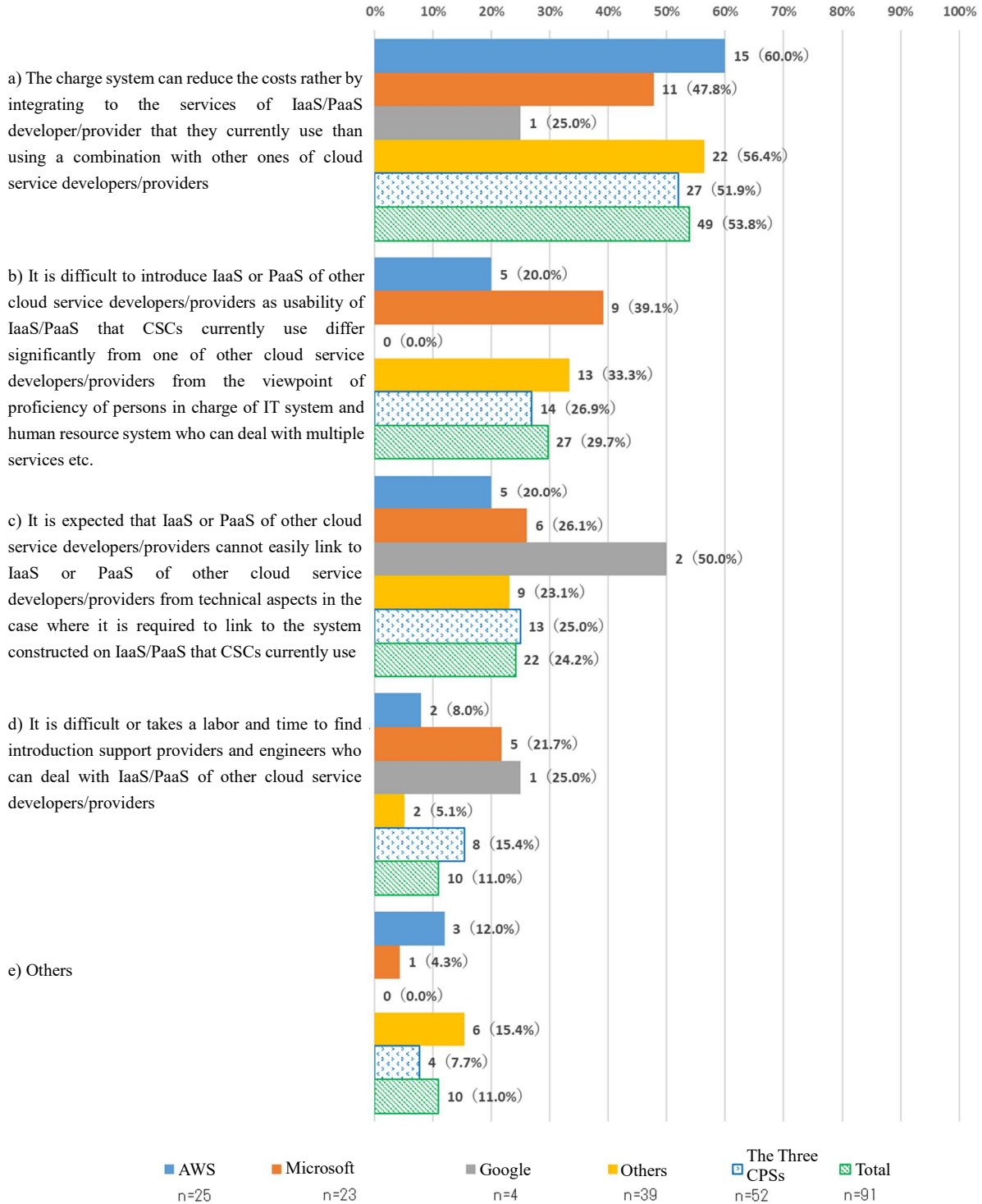


Q12. What is the reason for choosing the response in Q11? (in case of choosing a) or b) in Q11) **【Multiple responses allowed】**

**IaaS**



## PaaS



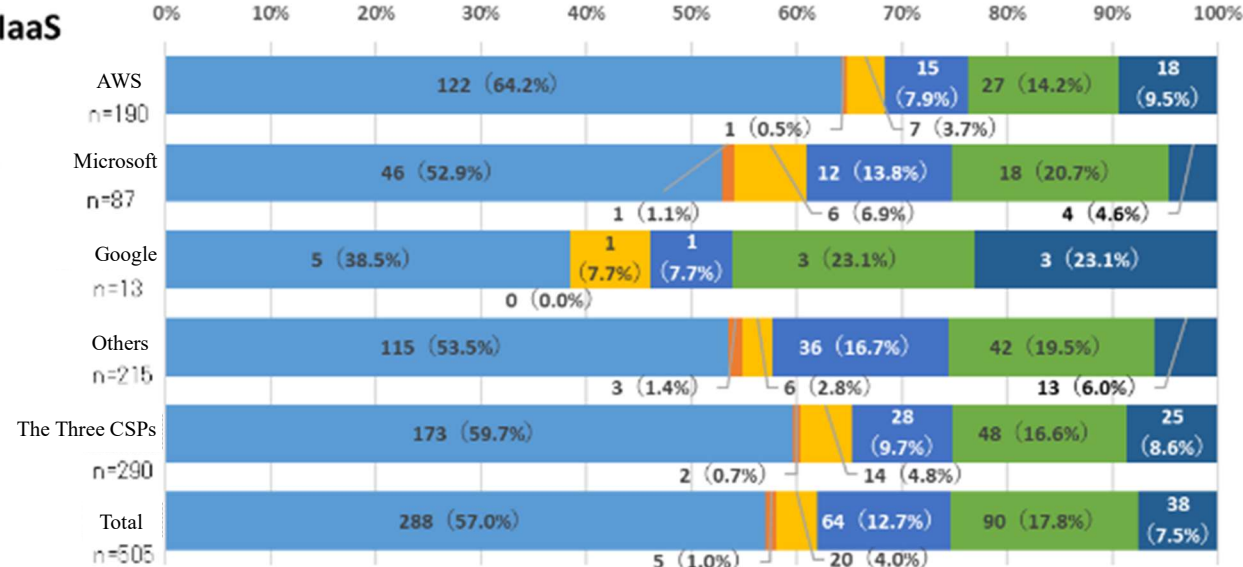
IaaS	AWS	Microsoft	Google	Others	The Three CSPs	Total
	(n=136)	(n=59)	(n=10)	(n=113)		
a) The charge system can reduce the costs rather by integrating to the services of IaaS/PaaS developer/provider that they currently use than using a combination with other ones of cloud service developers/providers	<b>52.9%</b> (72)	<b>61.0%</b> (36)	<b>70.0%</b> (7)	<b>40.7%</b> (46)	<b>56.1%</b> (115)	<b>50.6%</b> (161)
b) It is difficult to introduce IaaS or PaaS of other cloud service developers/providers as usability of IaaS/PaaS that CSCs currently use differ significantly from one of other cloud service developers/providers from the viewpoint of proficiency of persons in charge of IT system and human resource system who can deal with multiple services etc.	<b>45.6%</b> (62)	<b>42.4%</b> (25)	<b>20.0%</b> (2)	<b>35.4%</b> (40)	<b>43.4%</b> (89)	<b>40.6%</b> (129)
c) It is expected that IaaS or PaaS of other cloud service developers/providers cannot easily link to IaaS or PaaS of other cloud service developers/providers from technical aspects in the case where it is required to link to the system constructed on IaaS/PaaS that CSCs currently use	<b>19.1%</b> (26)	<b>18.6%</b> (11)	<b>10.0%</b> (1)	<b>26.5%</b> (30)	<b>18.5%</b> (38)	<b>21.4%</b> (68)
d) It is difficult or takes a labor and time to find introduction support providers and engineers who can deal with IaaS/PaaS of other cloud service developers/providers	<b>14.0%</b> (19)	<b>13.6%</b> (8)	<b>0.0%</b> (0)	<b>21.2%</b> (24)	<b>13.2%</b> (27)	<b>16.0%</b> (51)
e) Others	<b>7.4%</b> (10)	<b>6.8%</b> (4)	<b>10.0%</b> (1)	<b>9.7%</b> (11)	<b>7.3%</b> (15)	<b>8.2%</b> (26)

※ In the graph, the red cell shows the proportion of 50% or more of the respondents and the yellow one as 30% or more to less than 50%.

PaaS	AWS	Microsoft	Google	Others	The Three CSPs	Total
	(n=25)	(n=23)	(n=4)	(n=39)		
a) The charge system can reduce the costs rather by integrating to the services of IaaS/PaaS developer/provider that they currently use than using a combination with other ones of cloud service developers/providers	<b>60.0%</b> (15)	<b>47.8%</b> (11)	<b>25.0%</b> (1)	<b>56.4%</b> (22)	<b>51.9%</b> (27)	<b>53.8%</b> (49)
b) It is difficult to introduce IaaS or PaaS of other cloud service developers/providers as usability of IaaS/PaaS that CSCs currently use differ significantly from one of other cloud service developers/providers from the viewpoint of proficiency of persons in charge of IT system and human resource system who can deal with multiple services etc.	<b>20.0%</b> (5)	<b>39.1%</b> (9)	<b>0.0%</b> (0)	<b>33.3%</b> (13)	<b>26.9%</b> (14)	<b>29.7%</b> (27)
c) It is expected that IaaS or PaaS of other cloud service developers/providers cannot easily link to IaaS or PaaS of other cloud service developers/providers from technical aspects in the case where it is required to link to the system constructed on IaaS/PaaS that CSCs currently use	<b>20.0%</b> (5)	<b>26.1%</b> (6)	<b>50.0%</b> (2)	<b>23.1%</b> (9)	<b>25.0%</b> (13)	<b>24.2%</b> (22)
d) It is difficult or takes a labor and time to find introduction support providers and engineers who can deal with IaaS/PaaS of other cloud service developers/providers	<b>8.0%</b> (2)	<b>21.7%</b> (5)	<b>25.0%</b> (1)	<b>5.1%</b> (2)	<b>15.4%</b> (8)	<b>11.0%</b> (10)
e) Others	<b>12.0%</b> (3)	<b>4.3%</b> (1)	<b>0.0%</b> (0)	<b>15.4%</b> (6)	<b>7.7%</b> (4)	<b>11.0%</b> (10)

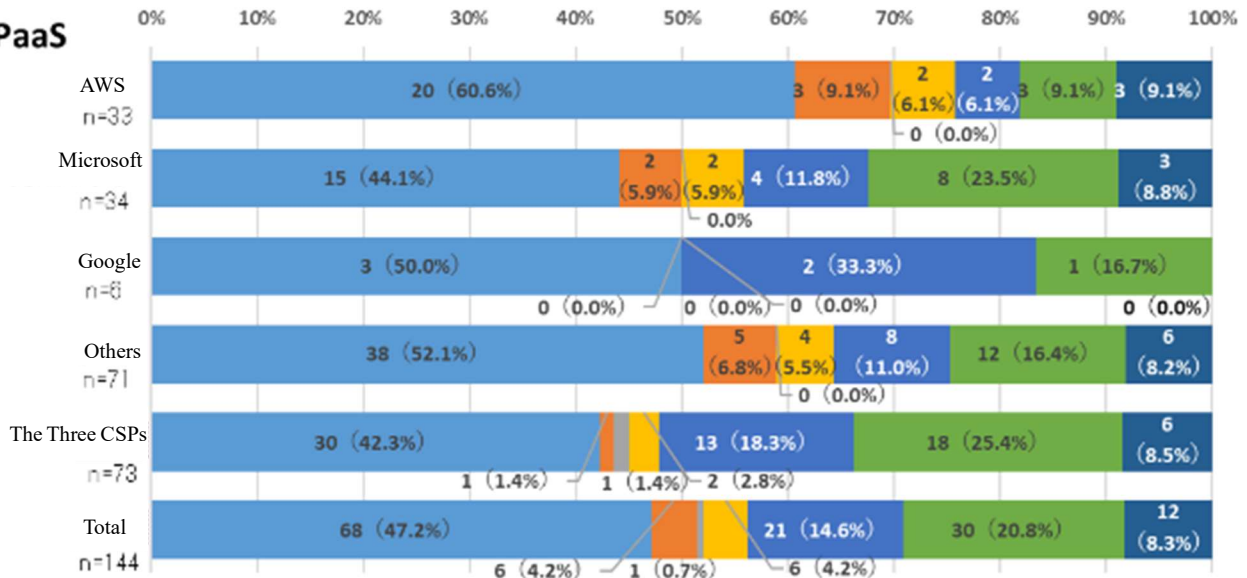
※ In the graph, the red cell shows the proportion of 50% or more of the respondents and the yellow one as 30% or more to less than 50%.

Q13. Is your company using the system where you use IaaS/PaaS of each cloud service developer/provider you answered in Q3 by incorporating and linking the businesses (of third-party) other than the said business (of first-party)? Please answer the current status of use and the consideration status at the time of introduction of software and applications



- a) We have been using third-party service other than the said cloud service developer/provider (of first-party)
- b) While we previously used a third-party service, as the said cloud service developer/provider (of first party) has started to provide its own functions, we switched from it to the said first-party service
- c) While we previously used a third-party service, due to the reason other than b), we haven't used it at present
- d) While we recognized that a third party had provided the similar service at the timing of introduction of software and applications, as we chose the service of the said cloud service developer/provider (of first party), we haven't used the third-party service
- e) As we understood that the service of the said cloud service developer/provider (of first party) is the only one that provides our desired functions at the timing of introduction of software and applications and thus we have used the said first-party service, we haven't used a third-party service
- f) Software and applications not linked to IaaS/PaaS
- g) Unsure

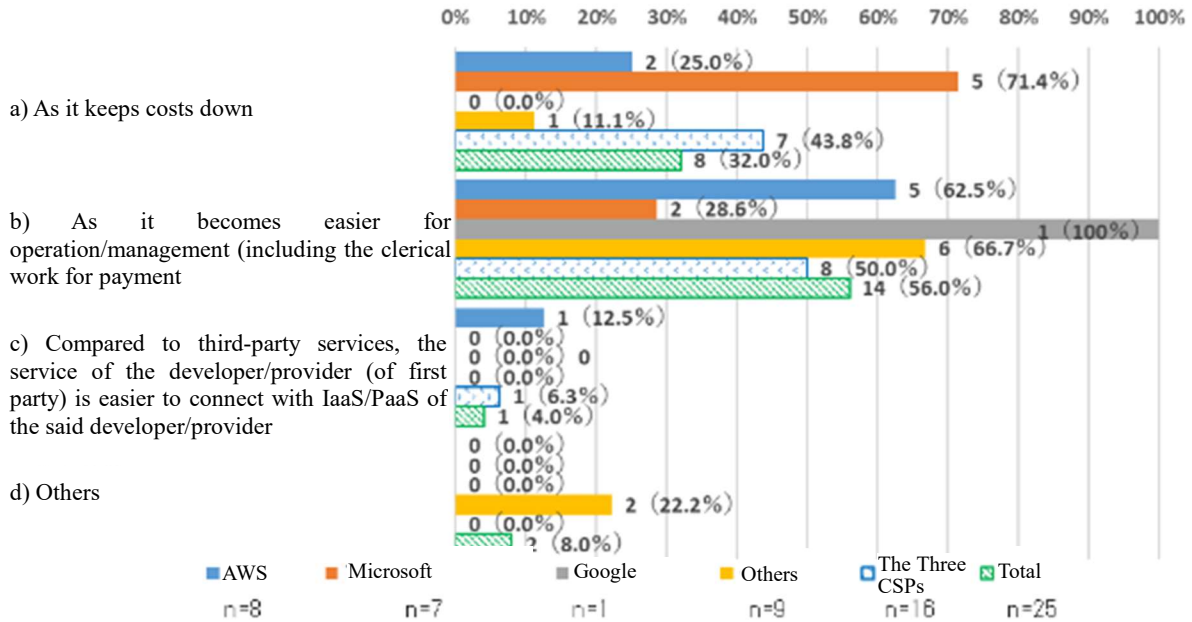
## PaaS



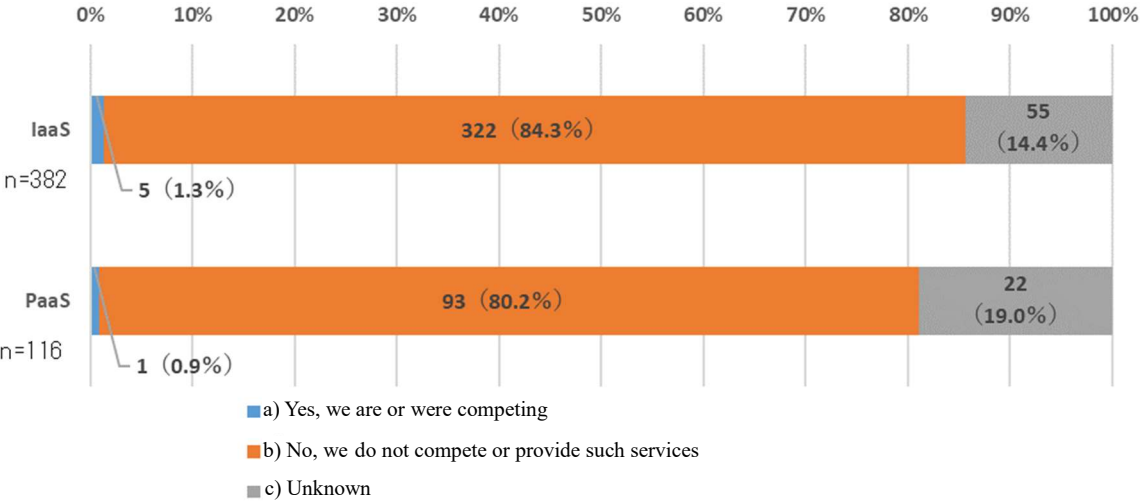
- a) We have been using third-party service other than the said cloud service developer/provider (of first party)
- b) While we previously used a third-party service, as the said cloud service developer/provider (of first party) has started to provide its own functions, we switched from it to the said first-party service
- c) While we previously used a third-party service, due to the reason other than b), we haven't used it at present
- d) While we recognized that a third party had provided the similar service at the timing of introduction of software and applications, as we chose the service of the said cloud service developer/provider (of first party), we haven't used the third-party service
- e) As we understood that the service of the said cloud service developer/provider (of first party) is the only one that provides our desired functions at the timing of introduction of software and applications and thus we have used the said first-party service, we haven't used a third-party service
- f) Software and applications not linked to IaaS/PaaS
- g) Unsure

Q13-1.(In the case of answering b) or d) in Q13.) What is the reason you have chosen the service of the cloud service developer/provider (of first party) in comparison with the third-party one? 【Multiple responses allowed】

IaaS

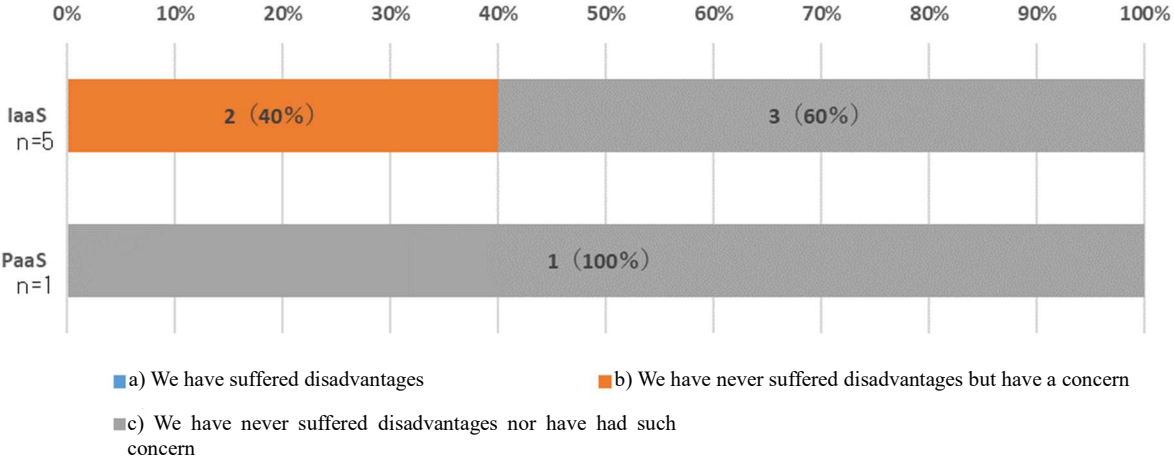


Q14. In the case where your company provides your customer with the service by making use of IaaS/PaaS of the cloud service developer/provider (for example, (i) providing business to provide SaaS by making use of IaaS/PaaS as the basis for the cloud service developer/provider, (ii) providing applications and software that operate on IaaS/PaaS of the cloud service developer/provider and have special functions and the like.), have or had the service that the cloud service developers/providers provides by themselves been competing with the services that your company provides?

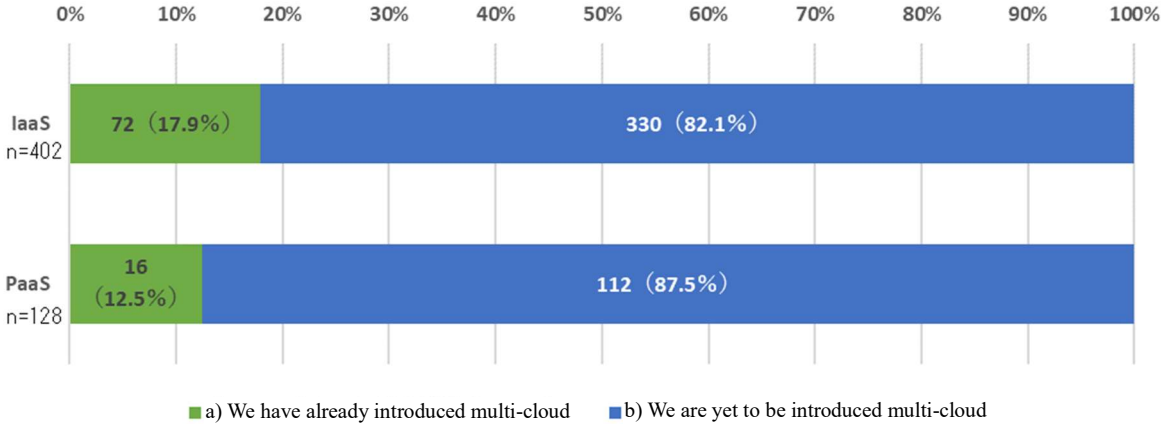




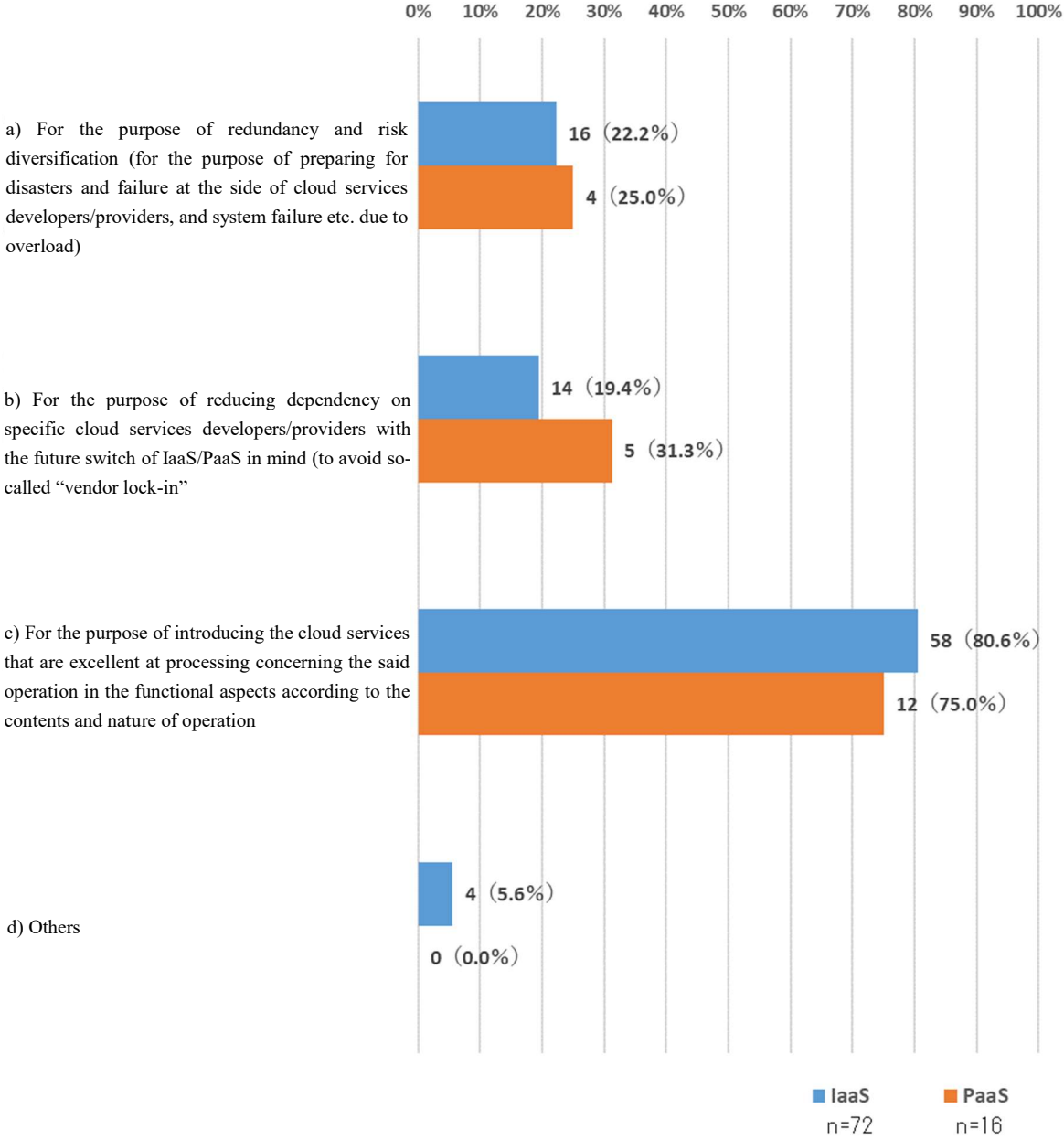
Q15.(in the case of answering “a) Yes, we are or were competing” in Q14), have you suffered disadvantages due to the actions by the cloud service developers/providers? Or do you have any such concern?



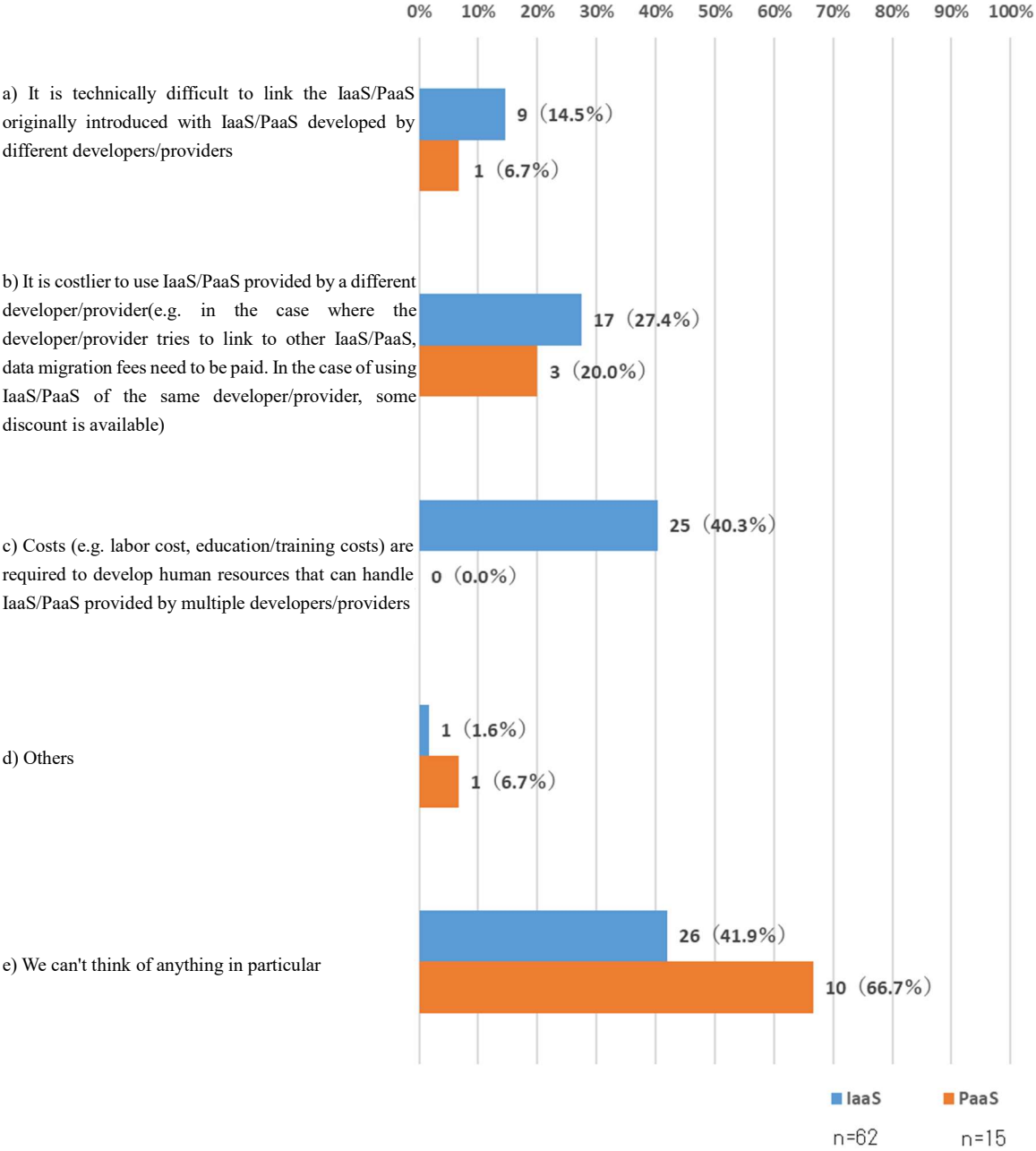
Q16.Does your company introduce multiple IaaS/PaaS provided by different cloud service developers/providers (so-called “multi-cloud”) and use a combination of and IaaS/PaaS by selecting the best service for each operation phase or assign the same function to IaaS/PaaS provided by different providers to achieve redundancy?



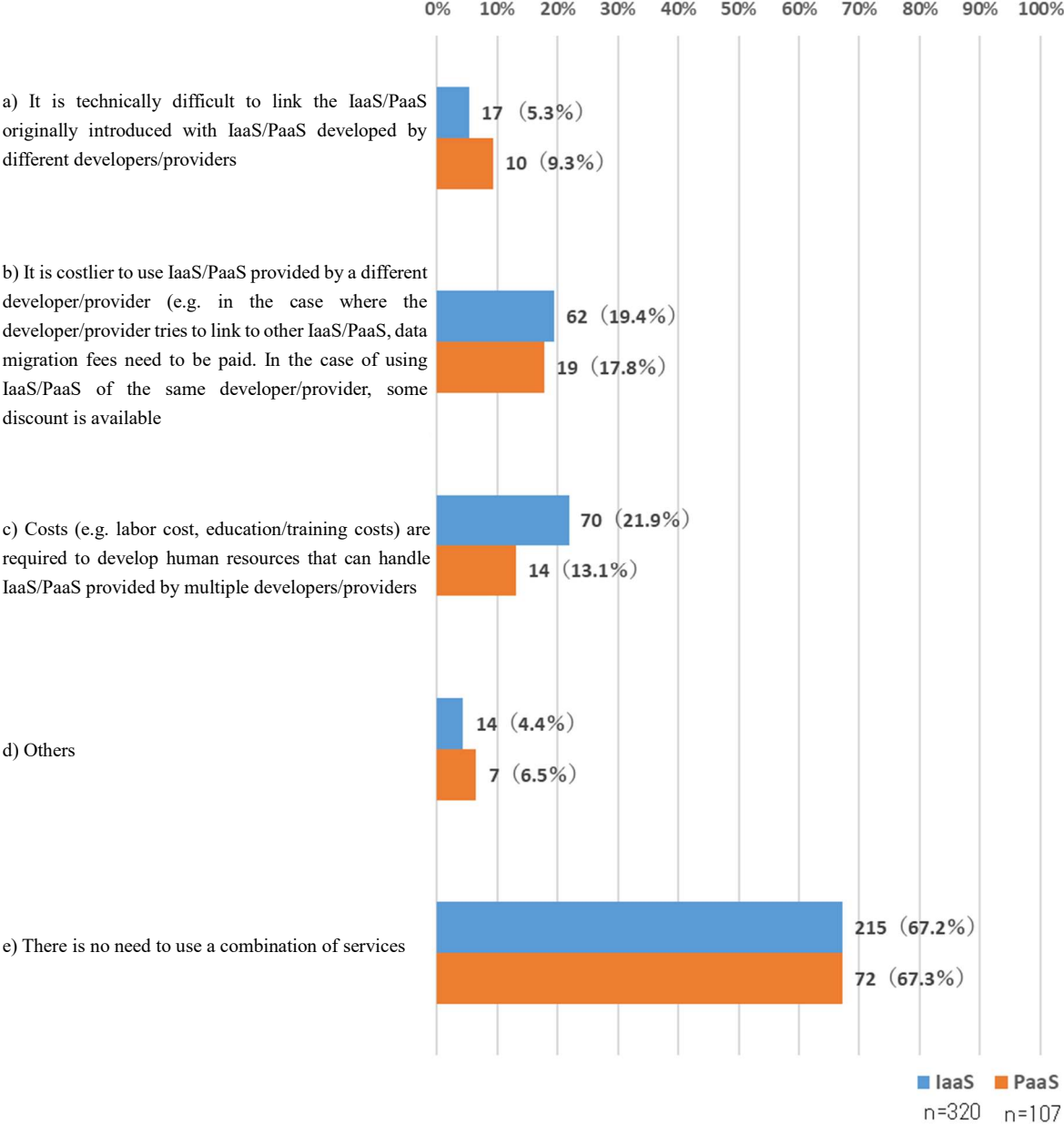
Q17.(In case of answering a) in Q16.) What is the reason your company combine different cloud service developers/providers for use? 【Multiple responses allowed】



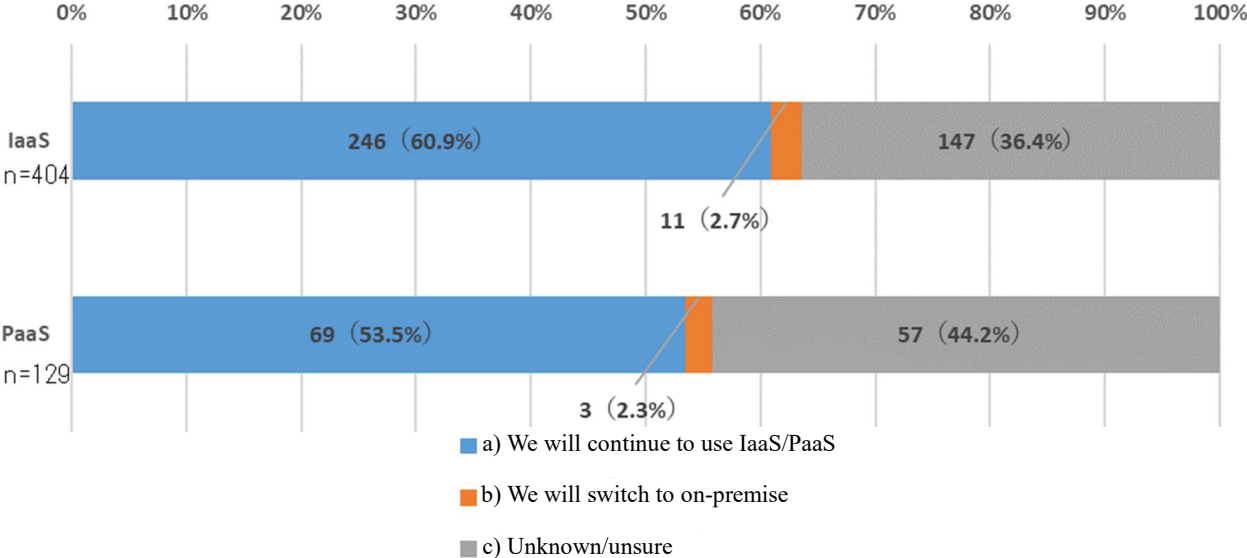
Q17-1.(In case of answering a) in Q16.) When your company combine different cloud service developers/providers of IaaS/PaaS for use, was there any factor that made such combination of use difficult? **【Multiple responses allowed】**



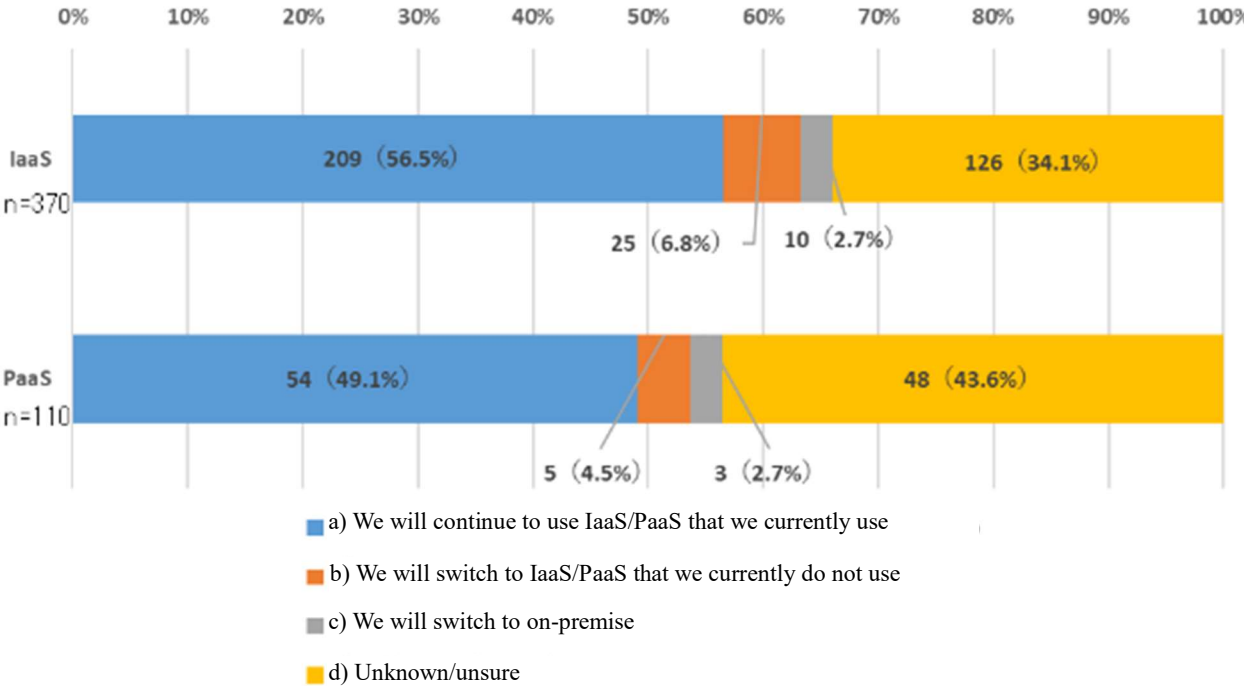
**Q18.(In case of answering b) in Q16.) What is the reason your company do not combine different cloud service developers/providers of IaaS/PaaS for use?  
【Multiple responses allowed】**



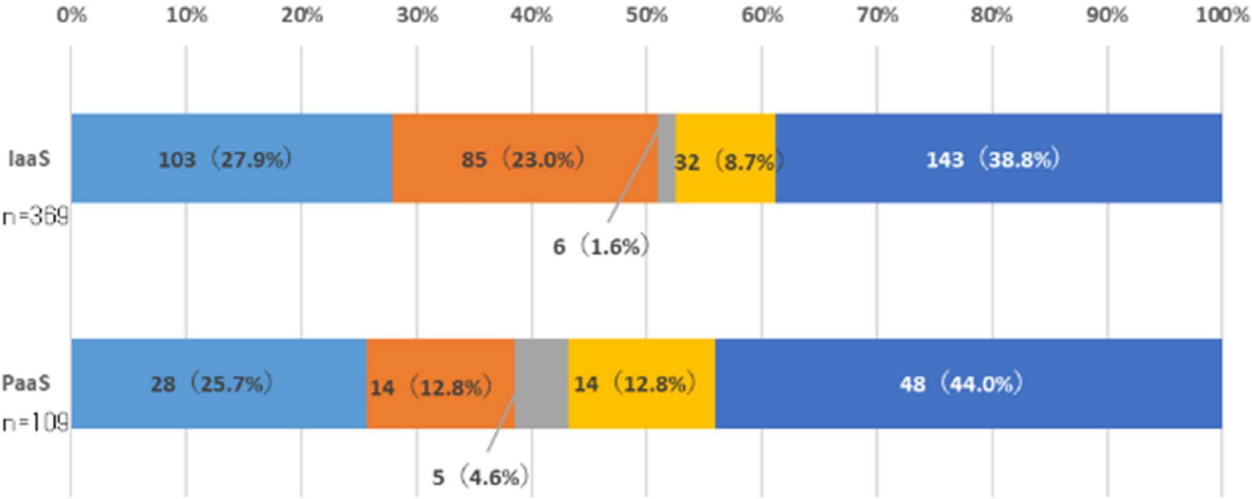
Q21. In the case where the prices of all IaaS/PaaS (that is, IaaS/PaaS that your company currently use and the one that you currently do not use) increases by 5 to 10%, how does your company take measures for that?



Q22. In the case where only the price of IaaS/PaaS that you currently use increases by 5 to 10% while the data amount currently used remains unchanged, how does your company take measures for that? (in the case where your company use multiple IaaS/PaaS, please answer the question in the case where only the price of IaaS/PaaS of the highest use amount among the ones of IaaS/PaaS which you currently use increases by 5 to 10%.)



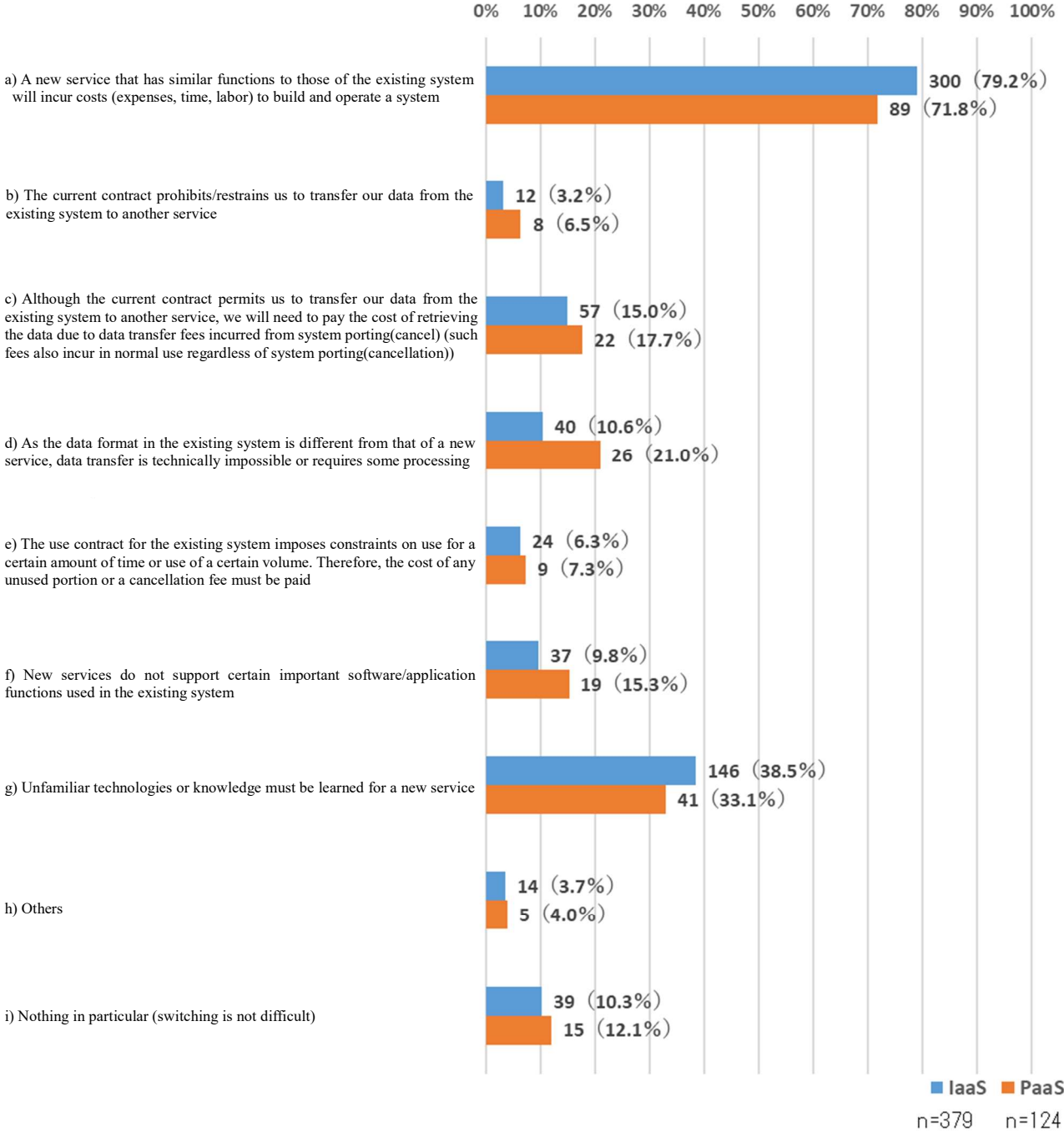
Q23. In the case where only the expenses on on-premise increase by 5 to 10% while the data amount currently used remains unchanged, how does your company take measures for that?



- a) We will continue to use on-premise
- b) We will switch to IaaS/PaaS that we currently use
- c) We will switch to IaaS/PaaS that we currently do not use
- d) We currently do not use on-premise
- e) Unknown/unsure



Q25. With regard to the highest amount of IaaS/PaaS among the ones you currently use, please answer the matter that you regard as the factor that make you difficult to switch from the said IaaS/PaaS. **【Multiple responses allowed】**



Q27. Does your company take measures to facilitate switching from IaaS/PaaS of the cloud service developer/provider answered in Q3 (measures to avoid so-called “vendor lock-in”? 【Multiple responses 】

