

Supplier Segmentation, IP Risk Assessment, and Modes of Access to IP as PLM Facilitates Earlier and Broader Supplier Integration

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PLM Facilitates Earlier and Broader Supplier Integration in New Product Development

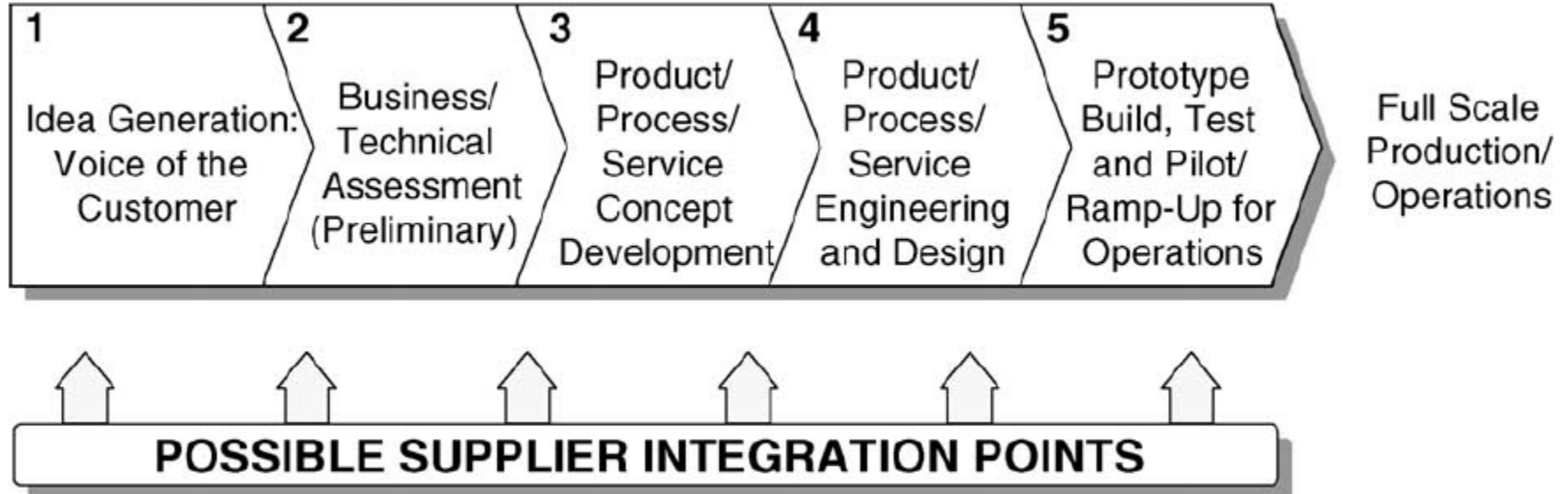


Fig. 2. New product development process.

Source: Petersen, Handfield and Ragatz, 2005, JOM

Ideally, PLM Benefits from Broad Access to Product Information

- But, not all suppliers can be treated equally in terms of access to information.
 - Supplier Tiers
 - Willingness to share proprietary information may differ
- Not all customers can be treated equally in terms of access to information.
 - Military access, Export licenses etc.

Ex: Access Problem at One Company

- Generally the differences in benefits between prospects are determined in advance by business level managers.
- IP access and risk of access is determined separately by IP licensing professionals. They seek to make necessary information available after selecting among prospects to reduce the risk of a high impact violation of compliance or the probability of a violation of compliance.
- We show risk below as essentially an interaction:
- Risk= Impact of a violation * Probability of a violation

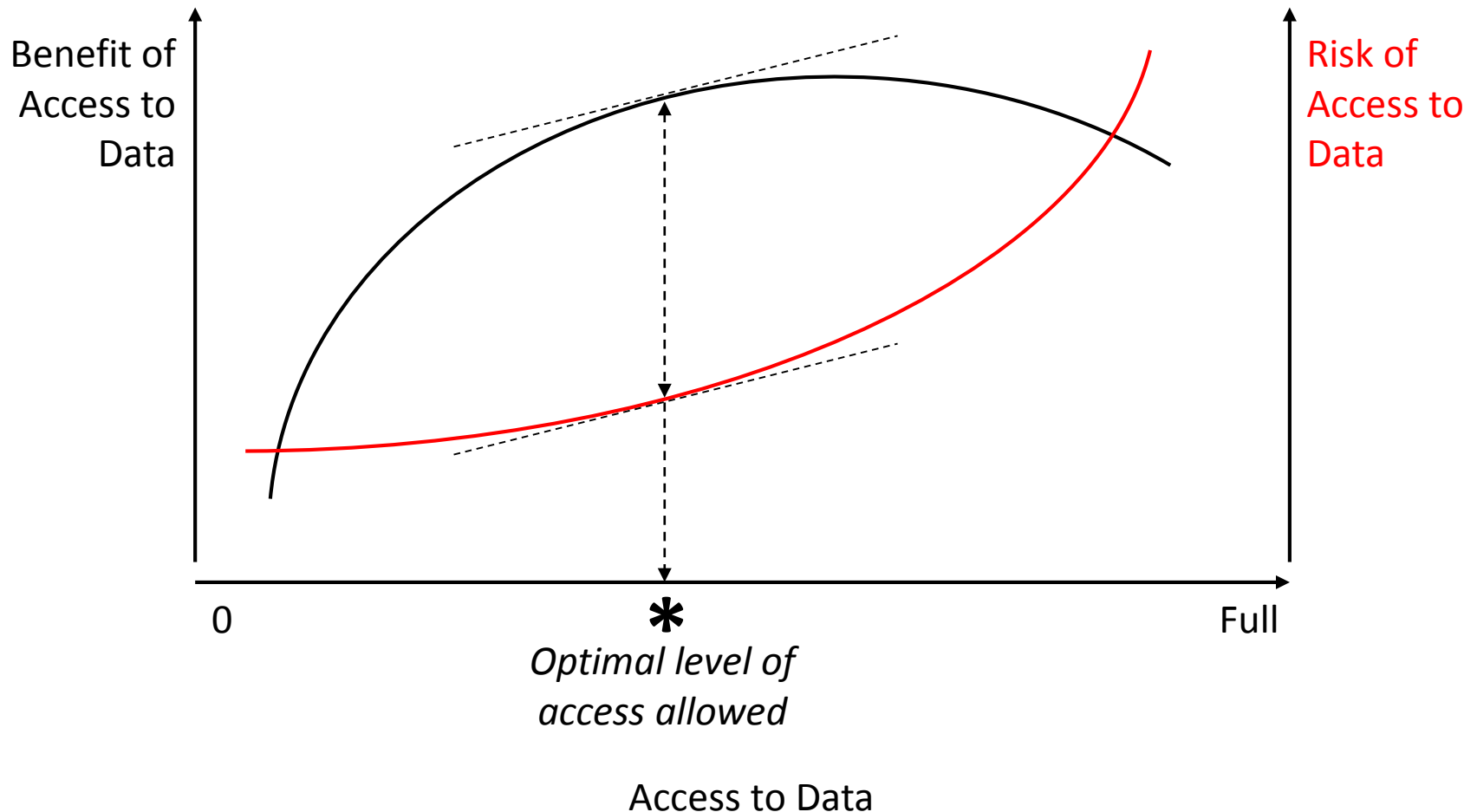
The risk attributes of a supplier are higher (from buyer's perspective) if...

- (More focused on impact of a violation:)
 - Absorptive capacity of supplier is high.
 - Supplier has a competitive relationship with this buyer.
 - There is a close relationship between this supplier and a rival of this buyer.
- (More focused on probability of a violation:)
 - The supplier has not been sensitive to IP concerns in general or with this buyer.
 - History of previous interaction has revealed opportunism by supplier.
 - There are specialized asset investments by buyer that need protection.

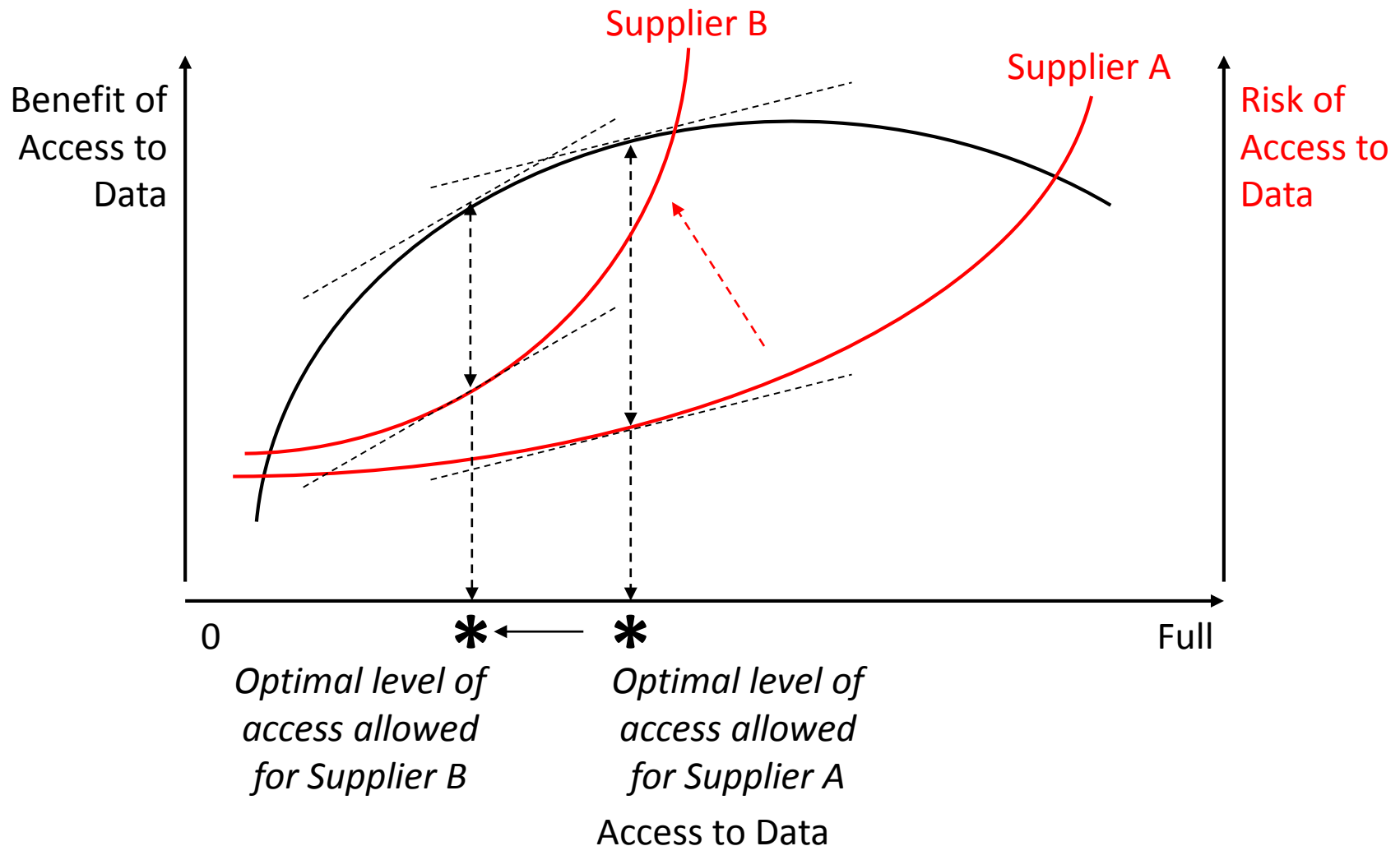
The benefit attributes of a supplier (from buyer's perspective) are higher if...

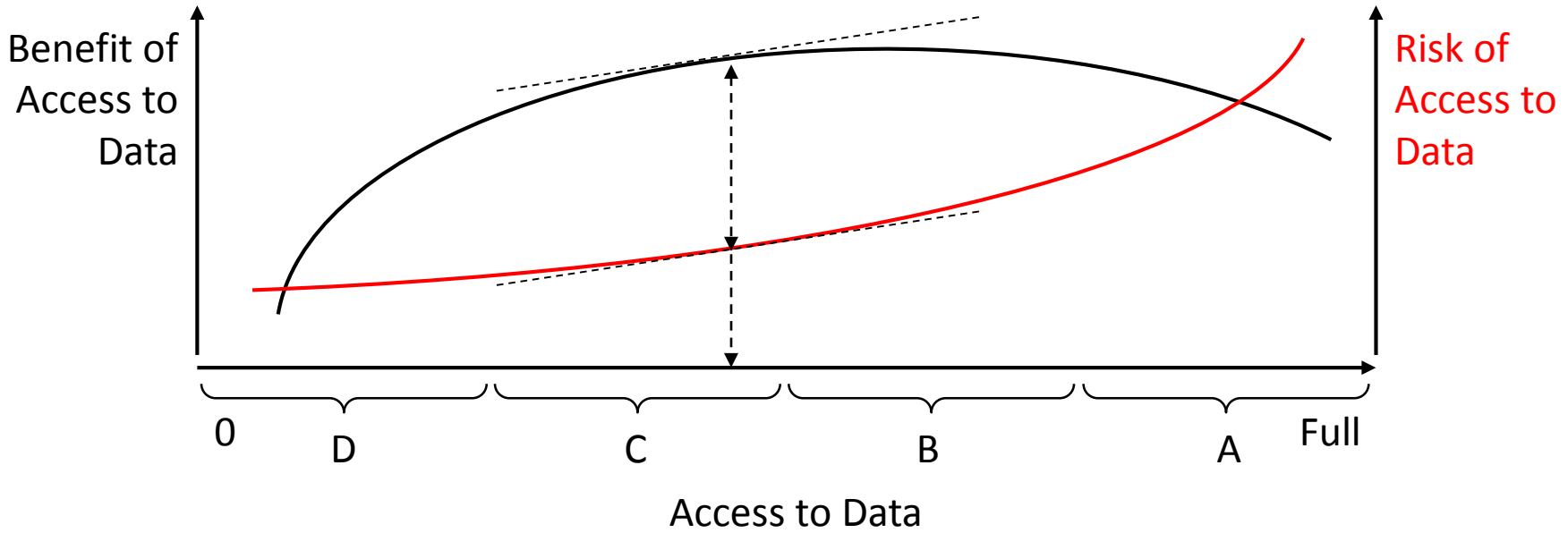
- (The business selects a range of suppliers that meet the needed benefits which are given to the IP and risk assessment group for review.)
 - The supplier makes a component that is critically important or a large part of the cost for the buyer.
 - The supplier has distinct and difficult to substitute technical capabilities.
 - The supplier is willing to share confidential information.
 - The supplier is willing to share cost data and jointly seek cost reductions.
 - The supplier is willing to share quality data and jointly seek quality improvements.
 - The supplier provides a new channel to a market.

Which suppliers (and customers) get selected and what is the required access to information?

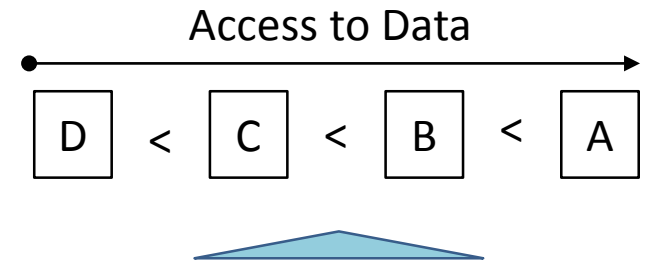


Which suppliers (and customers) get selected and what is the required access to information?





Benefit of Access to Data	H	<ul style="list-style-type: none"> • A • Most Access 	<ul style="list-style-type: none"> • B • More Access than C
	L	<ul style="list-style-type: none"> • C • Less Access than B 	<ul style="list-style-type: none"> • D • Least Access
		L	H
		Risk of Access to Data	



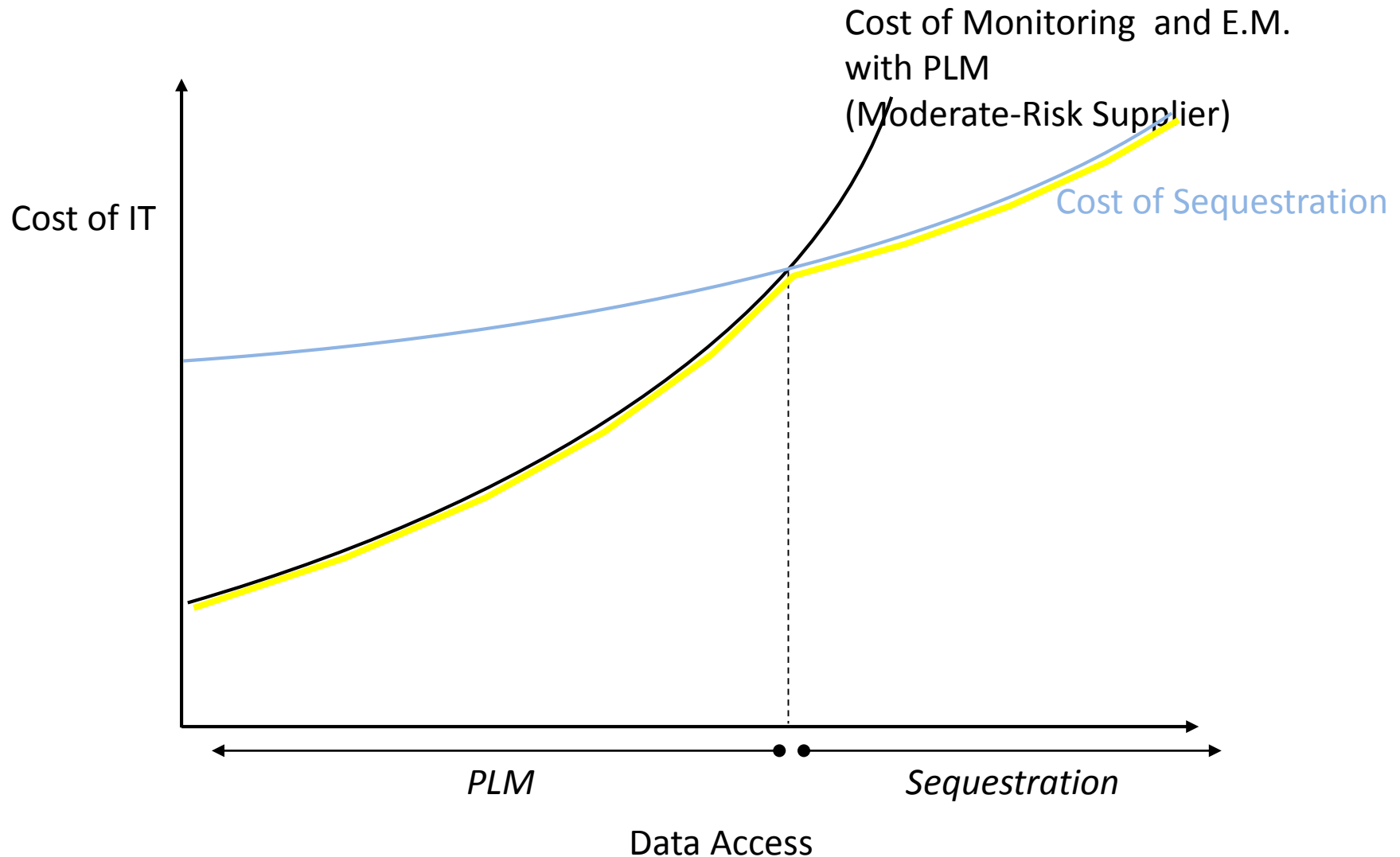
- Suppliers in B quadrant require more complete contracts than those in C

IT costs of Data Sequestration vs Risk Monitoring and Entitlement

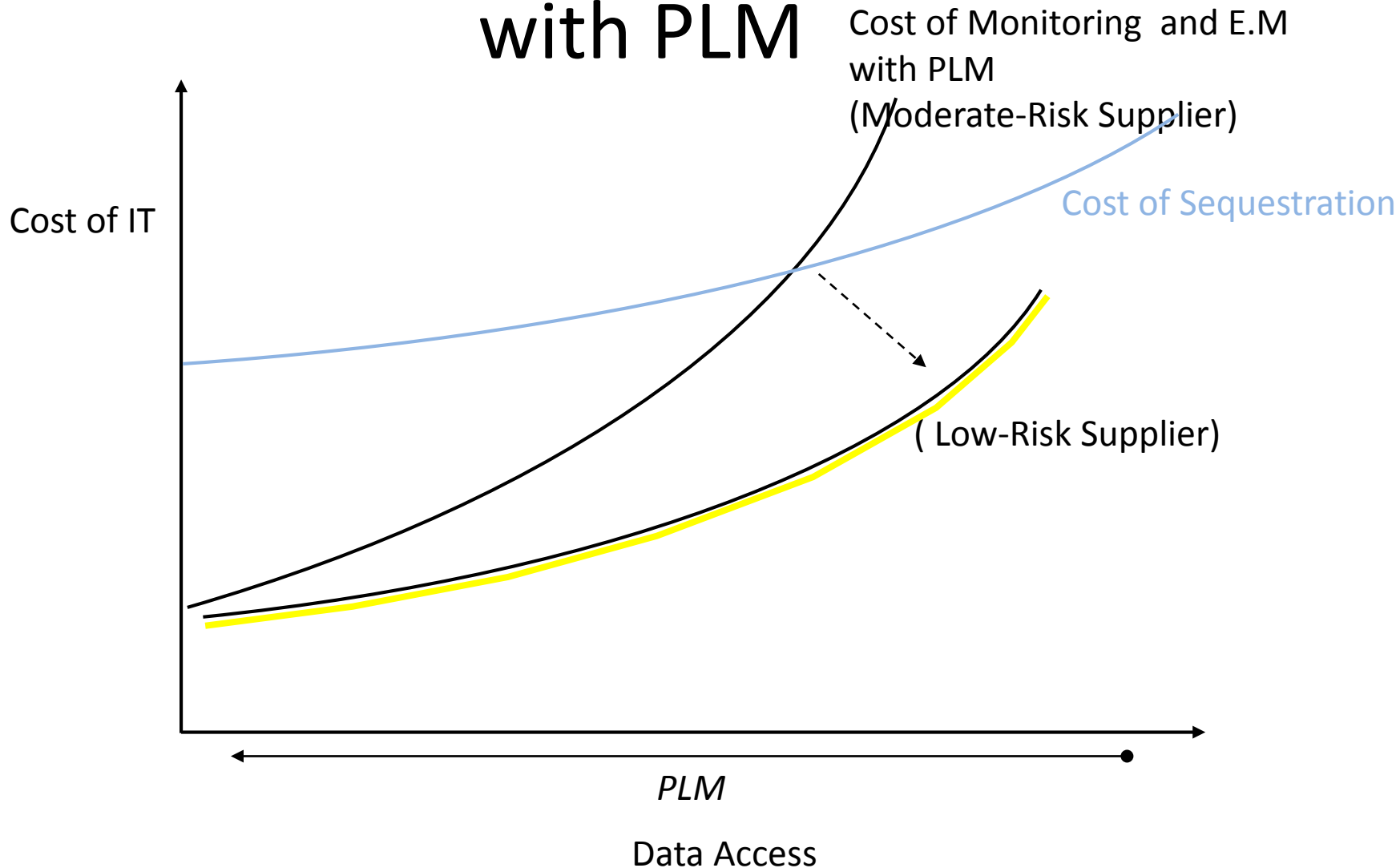
Management (E.M.) with PLM

- Pulling out data into separate sites is costly and requires reintegration of data after revisions since PLM site could also have been revised.
- But not having sequestration requires more risk monitoring and entitlement management tags which increases with riskiness of supplier. Tags exist for export control but are not as complete for IP.
- This cost suggests a reason to allow greater than optimal access to PLM (with monitoring and entitlement management) for some low risk suppliers.
- As access to data increases, both the cost of reintegrating sequestered data and the cost of monitoring and entitlement management access to PLM data increases.
- We assume that the cost of monitoring increases rapidly with higher level of data access due to greater risk of IP leakage and in this range sequestration is preferred.

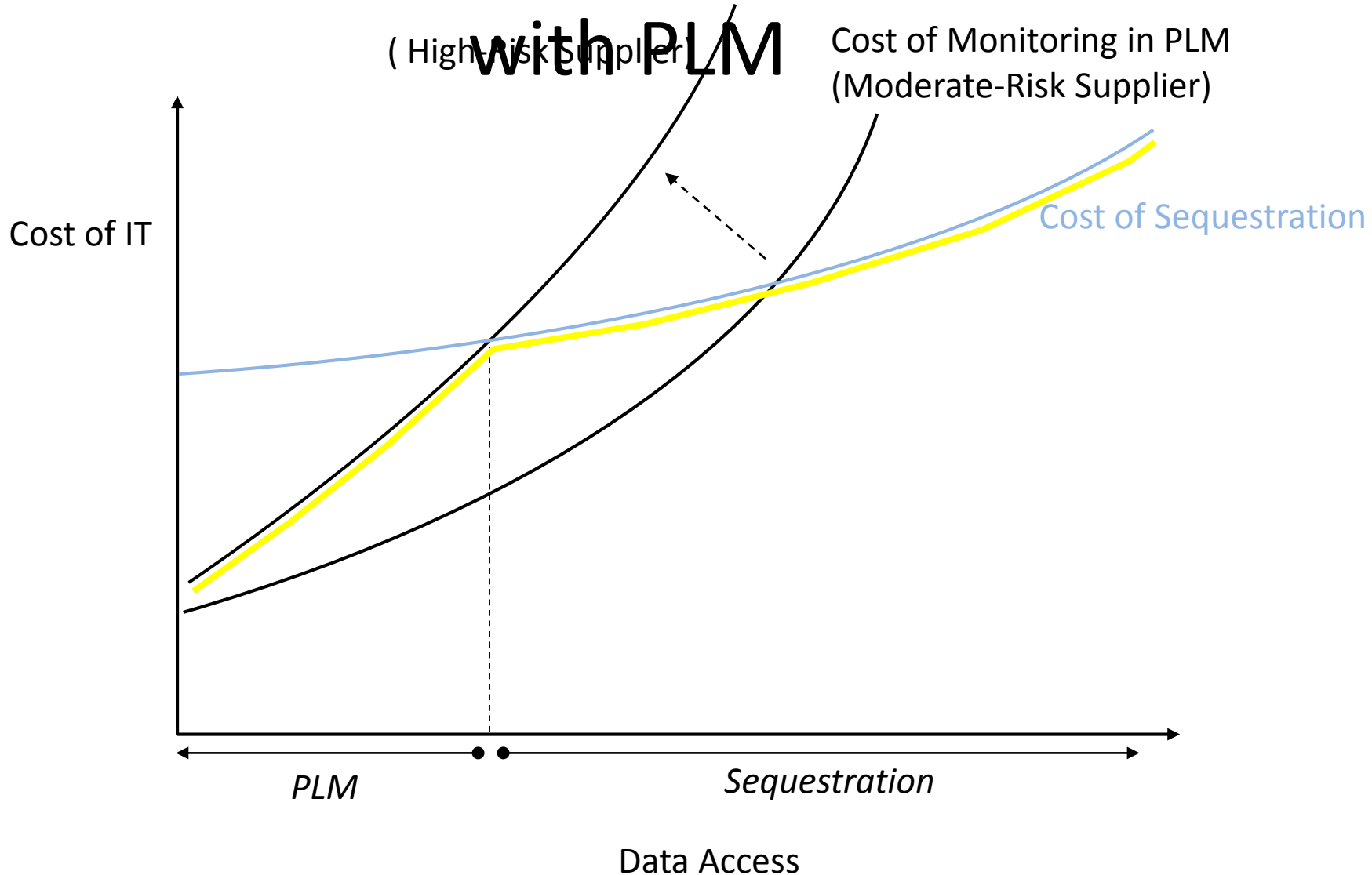
Sequestration vs. Monitoring and E.M. with PLM



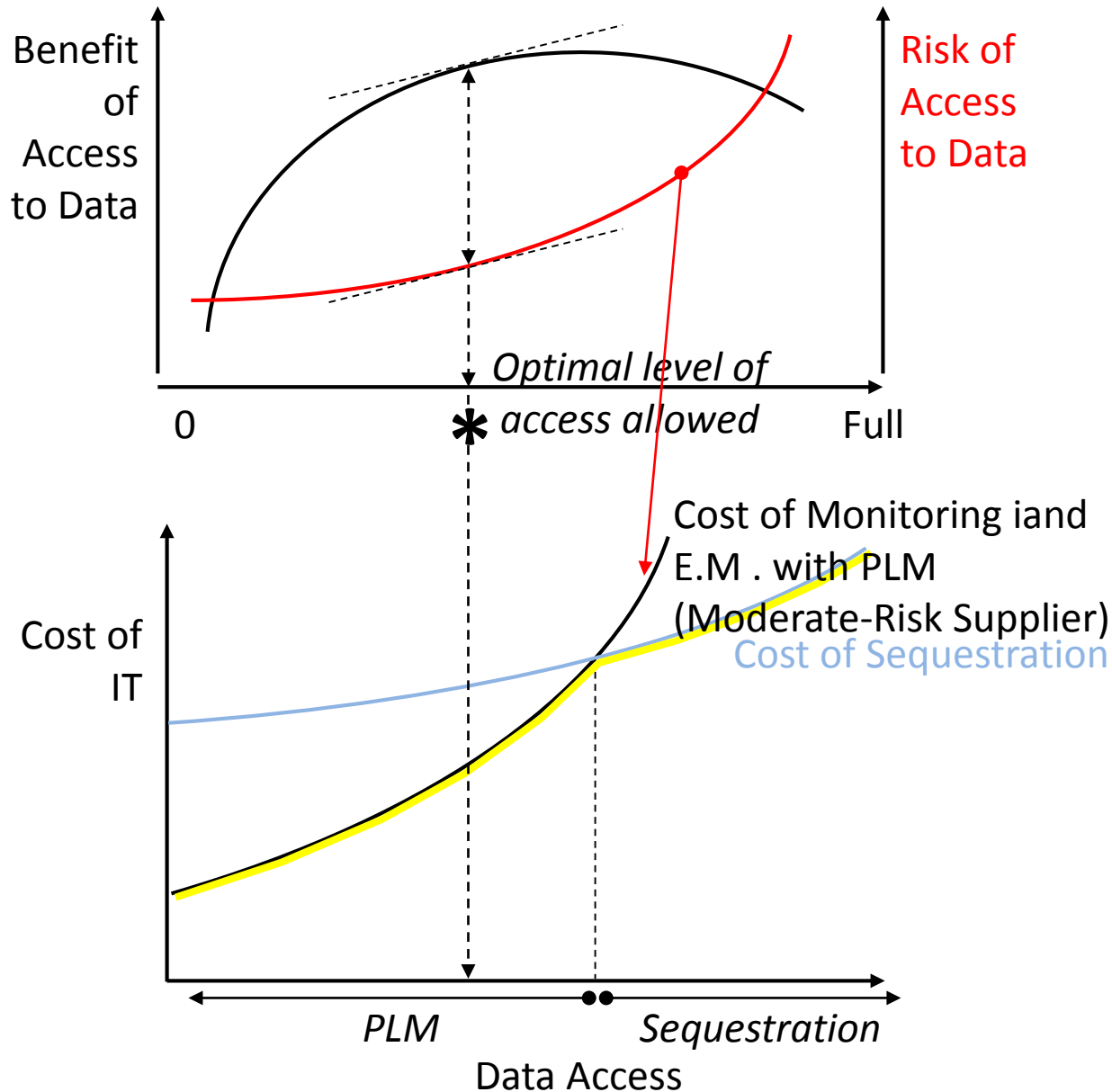
Sequestration vs. Entitlement Management (E.M.) and Monitoring with PLM



Sequestration vs. Entitlement Management (E.M.) and Monitoring



Sequestration vs. Monitoring and E.M with PLM



Approach

- It may be possible for the party concerned about information access to use these questions about Benefits and Risks to evaluate suppliers or customers with a score for their relative Benefits and Risks.
- In fact the LES (Licensing Executive Society) with a sub-group called IP in Supply Chain Standards Committee, is developing standards and certification schemes for evaluating suppliers in terms of IP risks.
- We have become members and can work with this body to evaluate the risk questions used and IP access granted for various firms. This will allow us to refine the risk curves in our schema.
- We could proceed with the assumption that the suppliers considered for IP access are a subset of all suppliers that meet the benefits expected. Given this subset, a supplier or suppliers are chosen that are below some threshold of risk.

Using the Data to Determine A More Granular Model of Risk for Suppliers

- Suppose each of the statements in the Risk sections (or questions determined by LES) was given a likert scale of 1-5, and raters within the focal company were asked to rate the supplier (customer) on those statements. Ideally multiple raters would be used for each statement for each supplier (customer).
- Given a number of suppliers that can solve a problem, which are below the threshold of risk? The coefficients will tell which are the most important factors for estimating the chosen supplier(s) that are below the threshold for a given program need.
- We can then use all the choices made to trace out the risk threshold curve for a number of supplier problems with different levels of data access.

Conclusion: Determining PLM vs Data Sequestration

- Given the risk threshold curve estimated, there is a strong relationship between this curve and the cost of monitoring in PLM.
- We can use the risk measures to estimate the sequestration vs Monitoring and Entitlement Management PLM access decisions for retrospective choices.
- This model could then be refined to be used for prospective new cases.
- We would then be able to predict for a future supplier that meets the risk threshold, to determine whether the risk and associated cost of monitoring and E.M with PLM access exceeds the cost of sequestration such that sequestration is preferred.

Questions?

Thanks for your feedback!