## **Question 1: Key Missing Issues**

Issues and Points: 27 point baseline (30 max)

1. Failure to address ("FTA") definition of natural monopoly (typically high fixed costs such that any amount of the good can be produced at lowest cost from a single facility): -2	
2. FTA extent to which telegraph industry is characterized by cost-side natural monopoly: -2	
3. FTA question of whether telegraph industry is characterized by demand-side network externality (certainly true from telegraph office to office: network is more valuable with more offices, but firms will internalize value of additional offices): -3	
4. FTA question of interconnection across three systems and where we might find bottlenecks (two key issues: Western Union Complete (WUC) is one of those, the second is whether one telegraph co. will transmit message from another competing corp.; e.g. both WUT and UST might go from Boston to Chicago; but only WUT from Chicago to St. Louis; will WUT transmit UST-originated message from Chicago to St. L?): -3	
5. FTA WUC as policy of non-interconnection and entry deterrence (Western Union appears to try to control the last mile, as it were, by refusing to allow telegraph competitor to connect to its local delivery infrastructure; put otherwise, WU is offering a bundled long-distance/local service; that forces potential entrant to not only enter the city-to-city transmission market but the local delivery market as well (or requires customers to pick up, but no good way to know when message has been sent); modern approach would force unbundling of local and long-distance in telegraph business): -6	
6. FTA general pricing issues in telegraph business (should fear monopoly pricing in areas where WU is sole provider; competition in some areas will mitigate that power): -2	
7. FTA pricing consequences of WUC (we aren't told whether WUC charges separately for local delivery; that is another way in which it can influence availability of alternative local delivery services; not charging separately probably creates cross-subsidization issues between high-volume and low-volume telegraph users): -3	
X1:	
Total Deductions	
Question 1: Additional Points	
<sup>2</sup> 1:	
Question 1: Final Score	

## **Question 2: Key Missing Issues**

ssues	and Points: 27 point baseline (30 max)	27
1.	FTA benefits of competition over standards (like any other product, no reason to assume extant standard can't be improved upon; only meaningful entry will let us assess whether new standard is superior to preexisting standard): -2	
2.	FTA collective action issues associated with standard setting (we have seen a series of these head-to-head standards competitions, such as VHS v. Beta; coordination issues can be tricky in general): -2	
3.	FTA the ways in which telegraph coding standards battle may be different from other standards battles (key issue is extent to which consumers do their own message coding; if not—if most just deliver the message to the telegraph co in English—WU can flick the switch and force coordination in an instant throughout its network though not across networks; consumers themselves won't need to switch standards unless self-coding): -3	
4.	FTA how WU is effectively unconnecting from other two competing systems in embracing a freestanding telegraph code: -2	
5.	FTA how switch to WUS is move towards greater bundling of the five services (consumers who use WU and who had been self-coding will need to learn new language; burden of doing so may cause them to switch to coding by WU): -2	
6.	FTA how switch to WUS alters competition between WU and other telegraph cos (doesn't matter if consumers don't have choices; with choice, advantage of using WU may be lower prices if WUS is actual improvement; disadvantage, esp for self-coding consumers, is need to learn new language and may choose instead to stay on old standard (use American or US)): -3	
7.	FTA WU priority scheme as analogous to network neutrality issue today (dominant carrier is prioritizing messages sent using its own telegraph code; during periods of congestion, this could be strong advantage that causes consumers to want to switch to WUS): -3	
8.	FTA refusal, after two years, of WU to interconnect with Morse Code systems (no general duty to deal with competitors though we frequently impose mandatory dealing obligations on dominant firms such as WU; here competitors can limit extent of disconnection by learning WUS but won't gain advantage from switch absent access to patented technology): -3	
9.	FTA WU use of patent (dominant positions often arise from leading patents (see <i>Berkey Photo</i> ) and even leading firm is entitled to benefits of patent): -2	
X1:		
Tota	l Deductions	
Questi	on 2: Additional Points	
<u>≟</u> 1:		
extant standard can't be improved upon; only meaningful entry will let us assess whether new standard is superior to preexisting standard): -2  2. FTA collective action issues associated with standard setting (we have seen a series of these head-to-head standards competitions, such as VHS v. Beta; coordination issues can be tricky in general): -2  3. FTA the ways in which telegraph coding standards battle may be different from other standards battles (key issue is extent to which consumers do their own message coding; if not – if most just deliver the message to the telegraph co in English – WU can flick the switch and force coordination in an instant throughout its network though not across networks; consumers themselves won't need to switch standards unless self-coding): -3  4. FTA how WU is effectively unconnecting from other two competing systems in embracing a freestanding telegraph code: -2  5. FTA how switch to WUS is move towards greater bundling of the five services (consumers who use WU and who had been self-coding will need to learn new language; burden of doing so may cause them to switch to coding by WU): -2  6. FTA how switch to WUS alters competition between WU and other telegraph cos (doesn't matter if consumers don't have choices; with choice, advantage of using WU may be lower prices if WUS is actual improvement; disadvantage, esp for self-coding consumers, is need to learn new language and may choose instead to stay on old standard (use American or US)): -3  7. FTA WU priority scheme as analogous to network neutrality issue today (dominant carrier is prioritizing messages sent using its own telegraph code; during periods of congestion, this could be strong advantage that causes consumers to want to switch to WUS): -3  8. FTA refusal, after two years, of WU to interconnect with Morse Code systems (no general duty to deal with competitors though we frequently impose mandatory dealing obligations on dominant firms such as WU; here competitors can limit extent of disconnection by learning WUS but		

## **Question 3: Key Missing Issues**

sues and Points: 36 point baseline (40 max)	36
<ol> <li>FTA comparison between telegraph funding program and post office (post office statute didn't allocate costs directly to rural users but instead made all customers bear costs, subject to federal general taxation backstop): -2</li> </ol>	
2. FTA comparison between telegraph funding program and highways (very much like funding scheme of later highway acts): -3	
3. FTA communication externalities issues and funding choices (with connection benefits flowing to both rural and local, cost sharing mechanism does a better job of aligning costs and benefits compared to one-side-pays-all cost allocation): -2	
4. FTA comparison between funding mechanism and rolled-in vs. incremental pricing debate (proposed sharing scheme rejects incremental pricing approach in favor of split of costs): -2	
5. FTA comparison between interconnection obligations of 1996 telcom law or 1992 energy policy act (modern approach to network regulation routinely imposes interconnection obligation): -3	
6. FTA consequences of price-cap scheme imposed in proposed bill (note first that it does impose cap; as to the cap itself, start with that it is almost certainly much too high as charged transmission charges are designed to recover the cost of building the telegraph network, but for the new muni lines, those costs will have been paid via the proposed bill; this means that if the telegraph co sets a rate at the cap, the prices charged will result in a cross-subsidy from the rural customers to the preexisting customers, the reverse of what we have seen before): -6	
7. FTA importance of entry using existing incumbent networks like the railroad: -2	
8. FTA rights-of-way access provision as a general version of interconnection: -2	
9. FTA comparison between rights-of-way access provision and pole attachments act (very similar; like that act, piggybacks on preexisting voluntary contractual access): -3	
X1:	
Total Deductions	
uestion 3: Additional Points	
<u>²</u> 1:	
uestion 3: Final Score	