BEFORE THE

# Federal Communications Commission

WASHINGTON, D.C.



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| In the Matter of | ) | |
| | ) | |
| Telephone Number Portability | ) | CC Docket No. 95-116 |
| | ) | RM 8535 |

## COMMENTS OF TIME WARNER COMMUNICATIONS HOLDINGS, INC.

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## SUMMARY

Time Warner Communications Holdings, Inc. ("TWComm") is the entity through which Time Warner, Inc. plans to provide, and in Rochester, New York is already providing, competitive local telephone service over its cable plant. TWComm is therefore critically interested in lowering the barriers to entry into the local telephone market. Perhaps the most important of those barriers is the absence of service provider portability.

Unlike the other types of number portability discussed in the Commission's Notice, service provider portability, the ability of a telephone subscriber to change carriers without having to change telephone providers, is an essential prerequisite for local competition. Numerous market studies, including those performed by TWComm and included in these comments, attest to the fact that a significant percentage of telephone subscribers are far less likely to change telephone companies if they have to change their telephone numbers. Moreover, because they control the switching of all numbers, incumbent LECs are uniquely placed to prevent their prospective competitors from gaining service provider portability. In service provider portability, therefore, competitive entrants face a classic market failure, solvable only by government intervention.

The <u>form</u> that such intervention takes is, however, as important an issue as the recognition that it is necessary. As

TWComm explains in these comments, it is critical that the Commission understand that the so-called "interim" service provider portability solutions, such as remote call forwarding and direct inward dialing, do not solve the competitive problem.

The Commission must instead implement regulations establishing a strictly enforced time line for the implementation of medium and long term database service provider portability solutions that meet certain specific functional requirements. In addition, where efficient, uniform national technical requirements should be imposed on all networks. For example, the Commission should establish a national call processing approach. But where it is efficient to permit each carrier to choose an aspect of the portability scheme that best suits its needs, the Commission should allow for such flexibility. Thus, TWComm has recommended that the Commission permit each provider to choose the numbering and triggering solutions for its own network.

Finally, TWComm believes that the Commission should provide adequate incentives for LECs to comply with its portability requirements, such as tying LEC requests for pricing flexibility to their deployment of database solutions and requiring that the so-called "interim" solutions be provided free of charge.

Federal regulations should not, however, eliminate state participation in service provider portability. TWComm has already begun to participate or plans to participate in trials in New York, Illinois, Ohio and Florida. These projects are extremely helpful opportunities to test database technology, and

the states must be permitted to continue to pursue them as well as other aspects of the promotion of number portability that are not inconsistent with federal policy.

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Time Warner Communications Holdings, Inc. ("TWComm"), hereby files its comments on the Commission's Notice of Proposed Rulemaking[1] in the above-referenced proceeding.

**INTRODUCTION**

TWComm, an affiliate of Time Warner Inc., represents Time Warner's commitment to providing competitive telephony to U.S. consumers. TWComm holds certificates of convenience and necessity from nine states, and has applications pending before others. While providing competitive access services and local private line services in various locations,[2] TWComm has begun offering local switched telephone services to customers in Rochester, New York, pursuant to interconnection and access arrangements achieved after lengthy negotiations with Rochester

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[1] See Telephone Number Portability, Notice of Proposed Rulemaking, CC Docket No. 95-116, RM 8535 (released July 13, 1995) ("Number Portability NPRM").

[2] TWComm affiliates currently provide alternative local access services in Ohio, Wisconsin, Indiana, North Carolina, Texas, Hawaii, Tennessee, New York, and California. Of these, New York and Ohio have authorized TWComm affiliates to provide local switched services.

Telephone Co. and approvals by the New York Public Service Commission. Through a strategy of "clustering" its cable systems, i.e., by amassing systems geographically adjacent in order to more efficiently share headends and other network functionalities, Time Warner through TWComm and related affiliates is poised to provide new services to its existing cable subscriber base in various areas throughout the country. Whether this potential will in fact be realized is critically dependent upon the removal of legal barriers and the deployment of appropriate technical and economic arrangements ensuring access to certain key services and functions under the absolute control of the incumbent telephone companies. Perhaps the most important among these issues is the subject of this proceeding: number portability.

If TWComm is to have any hope of gaining and retaining market share in the local telephone business, entrenched LECs must cooperate in providing true number portability. There can be no serious dispute that subscribers will be substantially less likely to switch local carriers if they must endure the expense and inconvenience of changing telephone numbers. There can also be no doubt that, as explained below, all of the various interim "solutions" to number portability leave competitive carriers at a substantial competitive disadvantage.

Given the importance of this issue, TWComm either has been or plans to be a participant in state number portability trials wherever TWComm plans to provide competitive local telephone

service. In both the Rochester and Manhattan trials, for example, number portability technology will be tested on TWComm's telephone network. TWComm is also involved in number portability workshops in Illinois and is planning to participate in a number portability standards group in Florida.

Although some states have thus begun to consider the manner in which to promote number portability, TWComm commends the Commission for undertaking this proceeding at this time. The Notice seeks detailed input to a variety of questions, and TWComm's comments are submitted in an effort to provide responsive input, including market demand studies and detailed analysis of current technological alternatives and the state trials underway to assess them.

It bears emphasis, however, that some of the most significant questions raised in the Notice cannot yet be answered, given the dynamism which characterizes the potential technical solutions. The choice of solutions available today will be eclipsed by answers discovered tomorrow. Moreover, particular solutions will likely prove satisfactory for some networks but not for others.

While TWComm believes there is a crucial role for government in this process, especially in light of the de jure and de facto monopolies enjoyed by the incumbent telephone companies, TWComm believes that the appropriate role of the FCC is not to designate "the solution" in this proceeding. Rather, the FCC must act to oversee a process in which local telephone companies are provided

adequate incentives, including the avoidance of government sanctions, to cooperate in the selection and deployment of a key element to competition in the local loop. This process must achieve two objectives: 1) it must allow for the near term availability of number portability using current database technologies so as to allow immediate introduction of local competition on a market-by-market basis, and 2) it must facilitate the establishment of nationwide number portability over the next several years as a long term solution.

The necessary steps to bring about number portability are discussed in detail below. Very briefly, TWComm believes the FCC must:

- Focus upon service provider number portability implementation, setting aside, at least for the moment, location and service portability;
- Understand that so-called "interim solutions" that do not rely upon database solutions, such as remote calling forwarding and direct inward dialing, are unresponsive to the problem;
- Establish a regulatory framework for medium and long term database solutions. The framework should include a six month time frame in which LEC deployment in response to bona fide requests is required, the prescription of specific parameters that must be met in order to qualify the LEC as in compliance, the establishment of a national call processing approach (N-1), and a requirement to work toward a new set of standards for all industry participants that will allow long term solutions to be deployed in the shortest time frame possible;
- Provide adequate incentives for LEC cooperation in the process, including tying LEC requests for pricing flexibility directly to their deployment of satisfactory database solutions, precluding the assessment of any charges by LECs for the provision of non-database approaches such as

remote call forwarding, and establishing a clearly articulated intention to impose maximum forfeitures and penalties for failure to comply;

- Allow state trials and tests to proceed within federally prescribed minimum parameters in order to maximize the opportunities for optimal solutions, while allowing states to pursue and enforce approaches not inconsistent with the federal schema.

## DISCUSSION

### I. The Commission Should Implement Regulations To Promote Only Service Provider Portability At This Time.

In the Number Portability NPRM, the Commission seeks comments on whether to encourage the development of service provider number portability, location number portability or service number portability. TWComm firmly believes that there is a critical need for the FCC to act to bring about service provider portability, but that government intervention in the development of either location or service portability is not justified at this time.

The Notice appears to attribute equal significance to all three types of portability. In fact, while it may eventually become necessary for the Commission to promote the development of location and service number portability, there is no clear need for such regulatory intervention at this early stage in the development of local competition. In contrast, the Commission must act promptly to promote service provider portability. Only in the latter case is it certain that LECs have the power and

incentive to deny their competitors access to an essential input of production.

Without service provider portability, competitive LECs ("CLECs") such as TWComm cannot compete effectively with incumbent LECs in the provision of basic local exchange service. The empirical data supporting this point is abundant and virtually irrefutable. The Notice cited the results of studies conducted for MCI and MFS that demonstrate the large percentage of telephone subscribers for whom a telephone number change is a major deterrent to changing local telephone providers.[3] TWComm's independent research, as discussed below, confirms these results.

TWComm has included with these comments as Appendix A the results of its own studies, performed through random telephone interviews and focus group discussions, on the impact of service provider portability on competition.[4] TWComm's telephone survey showed that local subscribers are 40% less likely to change telephone service providers if they would have to change telephone numbers.[5] Moreover, the focus group interviews produced strong anecdotal evidence that subscribers, especially

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[3] See Number Portability NPRM at 9 n.26.

[4] As explained in the study results, two studies were performed. In the first, telephone interviews were conducted with a random sample of households (totalling 2,400) from Time Warner's cable franchise areas in three cities. In the second, over 14 focus group discussions were conducted with residential as well as small, medium and large business customers in five cities. See Appendix A at 2.

[5] See id. at 9.

businesses, view the loss of their current telephone numbers as a serious deterrent to changing telephone companies.[6]

The competitive significance of portability gives the incumbent LECs the strong incentive to exploit their ability to prevent or delay the implementation of service provider portability. Numerous changes wholly within the private control of the LECs are necessary to achieve service provider portability. A LEC's refusal to cooperate could thus easily impede the prompt implementation of any proposed service provider portability scheme. Moreover, LECs obviously stand to benefit from refusing to cooperate since such refusal helps them retain customers. The implementation of service provider portability, then, represents a classic case of market failure justifying government intervention.

The situation with service and location portability, on the other hand, is quite different. The demand for these services is uncertain.[7] Further, incumbent LECs have the incentive to develop and provide these services if adequate consumer demand exists.[8] More importantly, once service provider portability is implemented, CLECs will likely be able to deliver location portability (at least within their own service areas) and service portability without the need to rely on LEC cooperation. In

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[6] See id. at 5, 8.

[7] TWComm has not conducted studies on the demand for either service and is not aware of any such studies.

[8] This may not be true, of course, for location portability outside of the LEC's service area.

short, there is every reason to expect that the market will provide service and location portability as demanded by consumers without any encouragement from regulators.

Moreover, any Commission attempt to encourage the development of location portability would confront serious practical problems. First, there is no industry consensus as to the proper geographic scope of location portability. For example, should subscribers be able to keep their phone numbers when moving to an area served by another switch in the same calling area, metropolitan area, Basic or Major Trading Area, LATA or state?

Second, location portability raises a host of billing problems that are as yet unsolved. For example, if portability results in subscribers receiving what would normally be toll calls on their old telephone numbers, it is hard to know who should pay. If the ported subscriber pays, callers in the old location will be unaware of the charges the subscriber is incurring. If the calling party is charged, callers would have no way of knowing whether a specific call would result in toll charges. Moreover, technology does not currently permit all calls to be billed if a calling party is charged.[9]

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[9] For example, it is not clear how to bill for calls outside of the service provider's network because this would likely require communication between the potentially incompatible billing systems of different companies. Furthermore, it is not clear how to bill for coin phone calls. The billing information for these calls is currently useless, and it is not apparent how portability solutions can require callers to deposit more money. It is also not clear how to bill cellular callers since billing

(continued...)

These problems can and will be solved if there is sufficient customer demand. This observation will especially hold to the extent the FCC is successful in establishing the necessary prerequisites for true local competition, since competing local carriers will gain or lose customers based on relative performance, including the offering of features such as location or service portability. It is thus crucial for the FCC to concentrate its efforts on these critical competitive conditions -- including service provider portability -- and leave the complex secondary issues to either marketplace solutions or, if and when necessary, subsequent government action.

## II. The So-Called Interim Solutions Such As RCF And DID Place CLECs At A Significant Competitive Disadvantage.

In the NPRM, the Commission described some of the limitations of the so-called "interim solutions" for service portability such as remote call forwarding ("RCF") and direct inward dialing ("DID").[10] It is important to emphasize, however, that these are not number portability solutions at all; they are merely existing services provided to the customers of competitive LECs. Moreover, as TWComm has experienced first hand in Rochester where RCF is deployed, these technologies suffer from severe competitive and technical problems.

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[9](...continued)
information is not available on the majority of cellular trunks. Finally, it is not clear how to bill for hotel/motel calls through operator services tandems.

[10] See Number Portability NPRM at ¶¶ 55-62.

First, the competitive problems with RCF and DID arise from the fact that they require all calls to a customer served by a competitive carrier to be routed through LEC switches. This results in LECs receiving all of the access revenues for interexchange calls to CLEC subscribers. Moreover, the potential for LECs to intentionally degrade service to the competitive carrier is obvious. Such arrangements also mean that new entrants must grant the incumbent LEC access to important proprietary information. True database service portability solutions avoid these competitive problems by removing control of the essential functionalities from the incumbent LEC and placing them in the hands of a neutral third party database administrator and the CLEC itself.

Second, the technical degradation of a competitive provider's service under RCF or DID is also an acute and well-documented problem. TWComm has included in Appendix B a comprehensive discussion of the technical flaws from which both DID and RCF suffer.[11] To summarize briefly, both services inefficiently utilize numbering resources and prevent CLEC subscribers from receiving certain CLASS features. Moreover, DID results in longer setup times for CLEC subscribers.

RCF and DID therefore place CLECs at a severe competitive disadvantage, and sound public policy precludes reliance upon

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[11] See Appendix B at 7-8.

these as even temporary "solutions" to number portability.[12] As described below, substantially more satisfactory solutions will be available in the near future.

## III. Current Technology Supports Medium Term Solutions That Offer True Number Portability.

There are four basic aspects of database number portability technology. The first important concept is the numbering scheme, which is the way a network identifies the proper destination for a ported call. MCI Metro's carrier portability code ("CPC"), AT&T's local routing number ("LRN"), and U.S. Intelco's local area number portability ("LANP") are all examples of numbering schemes.

The second important aspect of this technology is the trigger, which is a means of querying databases and routing calls based on the response. There are two kinds of database triggers: intelligent network ("IN") triggers and advanced intelligent network ("AIN") triggers. Any of the numbering schemes can be used with either IN or AIN triggers.

The third important aspect of number portability is the notion that different carriers can use different combinations of numbering and triggering schemes. That is, database technology will allow each carrier to choose the numbering and triggering schemes that work most efficiently on their respective networks. For example, one carrier using an IN trigger and a CPC numbering

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[12] Nevertheless, in the absence of true number portability, these services represent the only way CLECs can gain entry into the local exchange service market, albeit with considerable disadvantages.

scheme could interconnect with another carrier that chooses an AIN trigger and an LANP numbering scheme without suffering any compatibility problems. On calls originating on the first network and terminating on the second network, the database could handle the IN trigger and cause the call to be translated according to the requirements of LANP. On calls originating on the second network and terminating on the first network, the database could handle the AIN trigger and cause the call to be translated according to the requirements of CPC.

The final aspect of number portability technology is the call processing scenario, which determines at what point in the routing of a call the trigger causes a database to be queried. TWComm discusses call processing scenarios in detail in a later section.[13]

In the NPRM, the Commission seeks comments on the strengths and weaknesses of the various numbering solutions.[14] TWComm has included in Appendix B a full analysis of the CPC, LRN and LANP solutions. As a policy matter, the critical point of that discussion is that there are several approaches that, while perhaps not appropriate as permanent solutions, offer service portability far superior to that offered by RCF and DID and that are available in the very near term.

Of the major numbering schemes, only full LRN has an estimated "time to market" that exceeds about six months. The

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[13] See Section IV.C below.

[14] See Number Portability NPRM at ¶¶ 35-54.

longer time period for LRN arises from the fact that the SS7 call setup message parameter changes associated with LRN will require approval from standards bodies. That process could substantially delay implementation.

In contrast, the IN technology already deployed in most LEC switches for applications such as 800 number portability and the AIN technology deployed for certain other services can support CPC, LANP and (in modified form) LRN within about six months.[15] Unlike full LRN, implementation of solutions based on existing triggering technology will not require significant switch upgrades or approval from standards bodies.

Once implemented, the medium term solutions, while not as robust as full LRN, will offer true number portability. Unlike RCF and DID, these are database solutions that do not require all calls to be routed through LEC switches. They also support CLASS features[16] and do not result in the incumbent receiving a disproportionate amount of the access revenue.

Finally, it is very unlikely that implementation of medium term solutions will delay the implementation of longer term solutions. First, there is no reason why the study and implementation of appropriate long term solutions cannot proceed while the medium term technology is deployed. More importantly, longer term solutions will build on medium term solutions and

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[15] See Appendix B at 1-7.

[16] Some modifications may be required for existing AIN technology to support CLASS features, but these would not significantly delay implementation.

will not generally require carriers to dismantle previous upgrades. Any medium term solution, for example, will use the same database and the same signalling network as its logical successor long term solution. The only major change that a long term solution might require is a new trigger.

## IV. The Commission Should Establish The Regulatory Framework For The Deployment Of Medium And Long Term Service Provider Portability As Soon As Possible.

Federal regulators can play a critical role in overseeing the implementation of both medium and long term database service provider portability solutions. First, in light of the fact that database solutions can be deployed very soon, the Commission should require LECs to deploy such technology within six months of a bona fide request therefor. Second, the FCC should establish certain basic requirements for medium term solutions, while permitting adequate flexibility for carriers to choose the systems that serve them best. Third, it should establish a single national call processing scenario for service provider portability. Fourth, it should ensure that long term solutions are implemented as soon as possible. Finally, it should implement an equitable scheme for the recovery of the costs associated with RCF, DID and number portability solutions.

### A. The Commission Should Require LECs To Implement Medium-Term Service Portability Solutions Within Six Months After A Bona Fide Request.

Given that true number portability solutions can be deployed using essentially existing triggering technology, the Commission should require that LECs provide database solutions within six

months after a bona fide request from a competitive carrier. This will provide enough time for the LEC and CLEC to make any necessary system upgrades.

To help provide LECs with the incentive to comply with this deadline, the Commission should make the implementation of medium term as well as long term service portability solutions one of the prerequisites for granting price cap LECs the enhanced pricing flexibility currently being considered in the Commission's Price Cap Performance Review.[17] In that proceeding, the Commission sought comments on "specific standards for evaluating the state of competition in particular [interstate access] markets."[18] LECs in markets determined to be competitive would eventually become eligible for greater access pricing flexibility. Establishing the implementation of true number portability as one of the prerequisites to such a determination will help to create an incentive for LECs to deploy what is otherwise not in their interest.

Further, the FCC should clearly articulate from the outset its willingness to utilize its full enforcement authority to ensure LEC compliance. LECs should be placed on notice at the

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[17] See Price Cap Performance Review for Local Exchange Carriers, First Report and Order, CC Docket No. 94-1 at ¶¶ 368-418 (released Apr. 7, 1995). Of course, in the event that Congress passes legislation that gives the Commission the power to require LEC cooperation in the implementation of number portability as one of the prerequisites for entering the long distance market, TWComm would urge the Commission to use this mechanism as well.

[18] Id. at ¶ 407.

earliest time that they will be subject to possible forfeitures and penalties, such as those established under Title V, for non-compliance. Similarly, the FCC should make clear that the LEC obligation to provide service created by this proceeding is enforceable through the mandamus provision of Section 406[19] in federal district courts.

### B. The Commission Should Establish Certain Baseline Requirements For All Medium Term Database Solutions.

While it is critical that the Commission compel the deployment of service portability solutions, it should refrain, at least during the implementation of medium term solutions, from imposing a uniform national numbering scheme. This is because there is substantial heterogeneity among LEC and CLEC networks and different switches respond differently to the various service portability numbering solutions. In some cases this will mean that the optimal numbering solution for a CLEC is CPC while the LEC with which it is interconnected would operate most effeciently using LANP. At least initially, therefore, CLECs and LECs should be given the opportunity to decide which of the service portability solutions work most efficiently on their respective networks.

The FCC can, however, ensure the implementation of adequate solutions by defining certain baseline criteria with which all medium-term solutions must comply. Accordingly, TWComm

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[19] 47 U.S.C. § 406.

recommends that all medium term solutions permissible under the FCC's order meet the following requirements:

1. The provision of true number portability - The ported subscriber must be able to keep his or her original telephone number. That is, the ported subscriber's automatic number identification and calling party number must be the same as the number callers use to reach the ported subscriber.

2. A database solution - Routing numbers should be stored in a service control point database that is administered by a neutral third party.

3. Triggering - Either an IN or AIN trigger must be used to access the database. In cases where a LEC has neither IN nor AIN, the Commission should require the deployment of IN triggers.

4. Numbering - The database should support the carrier's choice of CPC, LRN or LANP.

5. Full feature interactions - All switch-based functions, including CLASS functions, should function properly.

6. Efficient allocation of access revenues - The CLEC should be able to charge IXCs for access to its facilities.

7. Ten digit routing - A ten digit routing code should be used to route calls from the LEC to the CLEC.

### C. The Commission Should Require The Adoption Of N-1 As A National Call Processing Scenario.

In addition to establishing requirements for medium term solutions, service provider portability will function efficiently only if the Commission establishes a single, national call processing scenario. Without a national approach, a patchwork of solutions would cause switches along the network to make redundant database dips. When combined with the requirement that carriers deploy a forward call indicator bit as a backup

protection,[20] a single national approach is by far the most reliable way to prevent this problem. As explained in detail below, TWComm believes that the N-1 scenario is the most efficient national approach.

As the Commission explained in the NPRM,[21] there are at least three processing scenarios: terminating access provider ("TAP"), originating service provider ("OSP") and N-1. Under TAP, the subscriber's old end office receives the call and then routes it to the subscriber's new end office. TAP suffers from three critical flaws. First, when a ported subscriber receives an interLATA call, the incumbent LEC receives the access revenue for completion of the call. Second, TAP utilizes trunk capacity inefficiently. This is because the ported subscriber is not assigned to the switch that performs the service provider portability queries and therefore causes both an incoming trunk and an outgoing trunk to be tied up. Third, the call traverses through more switching systems than with other approaches causing longer call setup time than the other scenarios.[22]

Under an OSP approach, the end office placing the call is responsible for sending the query to the portability database. Thus, OSP does not suffer from the problems relating to access

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[20] A forward call indicator bit signals to downstream switches that a database query has already been made for a particular call.

[21] See Number Portability NPRM at ¶¶ 43-47.

[22] This is especially true with long distance calls that require the call to be routed through tandem switches.

charges, inefficient use of trunk capacity or call setup time present in TAP. As the Commission noted in the NPRM,[23] however, OSP would burden all LECs around the country with the requirement that they access the relevant database to determine whether the called number has been ported. Furthermore, OSP presents the added problem that LECs without IN or AIN would have to tandem all originating calls through a portability capable switch.

On balance, N-1 is the most efficient call processing scenario. Under that scheme, the second to last carrier in the routing of a call handles the database query. N-1 avoids the excessive trunking needs and other problems associated with TAP and obviates the need for originating LECs to flash-cut to distant portability databases. Accordingly, the Commission should mandate that the nation adopt N-1 as a uniform call processing scenario. As a safety backup mechanism, however, the Commission should also require deployment of a forward call indicator bit.

### D. The Commission Must Ensure That A Long Term Solution Is Implemented As Soon As Possible.

While these comments have thus far focused on the need for an adequate service provider solution as soon as possible, it is also important to emphasize that a long term solution should be implemented as soon as circumstances permit. Indeed, while TWComm firmly supports the policy of implementing medium range solutions, it is fully aware of the risk of that approach. That

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[23] See id. at ¶ 45.